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cp software

NEW

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CLOCK CHESS 88 is the **strongest** and **most versatile** chess program yet for your PCW computer. It has the most advanced 3D graphics, the widest range of options, the power to play incredibly fast and the intelligence to selectively search deep into the position.
CLOCK CHESS 88 has been tested against a wide range of other chess programs and has shown itself to be stronger than any of them.

Written using the latest techniques CLOCK CHESS 88 does not use the usual "brute force" method of searching for the best move, but instead is packed with chess knowledge which uniquely allows it to search only those moves which are "sensible" or "interesting" and not to waste time analysing lines of play which it regards as "trivial". In addition, it has a variable search depth which results in a deeper search of active lines, thus reaching those parts that other chess programs cannot.

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- achieves all the standard mates including those occuring with minor pieces in the endgame – well able to handle difficult pawn endings
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"CLOCK CHESS 88 is a lively and interesting opponent. An aggressive program that keeps you on your toes .... it dices up Colossus Chess nicely" Mike Basman, UK Chess Champion.

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In the Player mode there's a wide range of options which ensure you can learn something new each time... The display is fine, you play your round with lots of info about the last trick and the score displayed around the edge of the screen.... This is a very thoughtful way to get the most out of Bridge on the computer..... Bridge Player 2000 is a good one" PC Plus.
"Large and simply explained Tutorial, easy for beginners, could easily keep a Bridge player occupied for the rest of eternity" 8000 Plus

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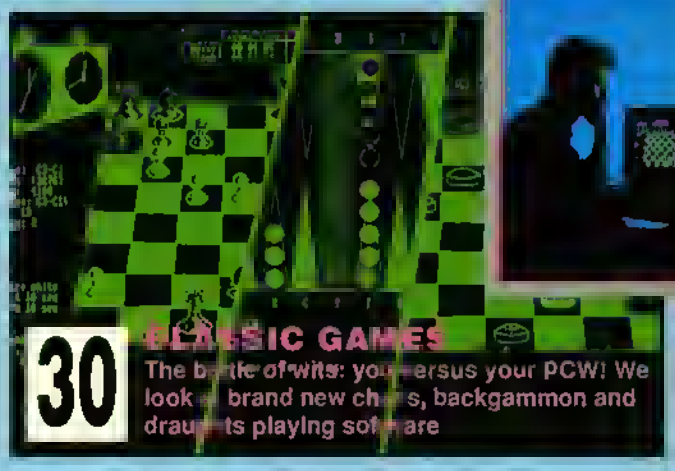

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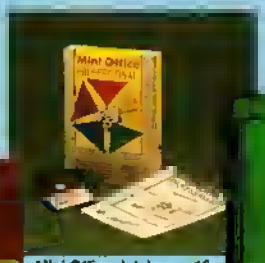

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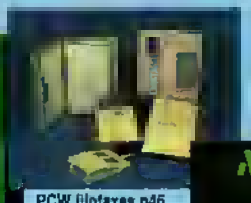
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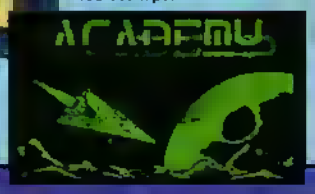

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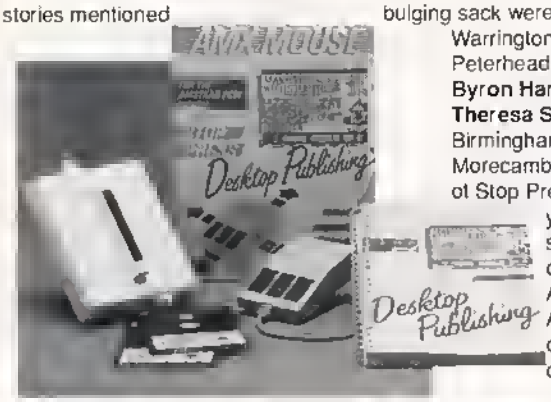
A334

Stop Press winners

The Stop Press competition in our March issue drew a tremendous response. In the highly arbitrary opinion of our arbiters, the correct fonts to be matched with the news stories mentioned



were deemed to be:
1-D; 2-F; 3-A; 4-C; 5-E; 6-B.

The percentage of correct answers was around 20%, and the first five such entries drawn out of a bulging sack were from: **R Barrett** Warrington; **Andy Napier** Peterhead, Aberdeenshire: **Byron Harding** London; **Theresa Stewart** Birmingham; and **P Shelling** Morecambe, Lancs. A copy of Stop Press is on its way to you even as we speak with our congratulations. And our thanks to AMS who helped organise the competition.

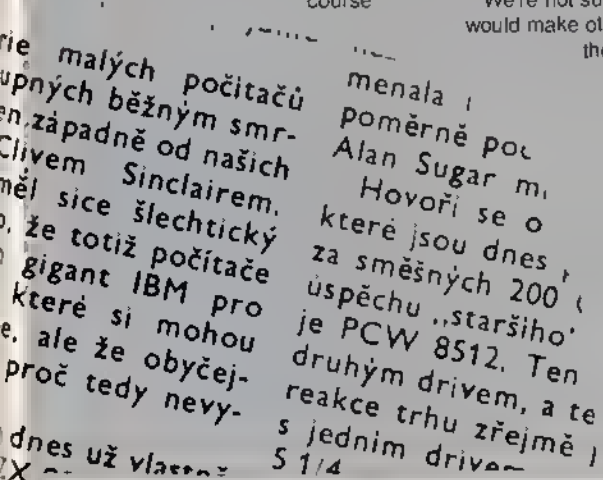
Predstavujeme

No, we don't know what it means either, but it's the title of a column written in the Czechoslovakian counterpart of 8000 Plus, *Elektronika*, by Dr Stefan Rybar. We're very keen on international friendship and co-operation, so when Dr Rybar (that PhD is in journalism, by the way) told us he was passing by Bath on his recent visit to England, we were of course happy to meet up.

It was interesting to learn of the PCW's adventures in the country which has become famous for Pilsner and dreadful puns, and to see *Elektronika*. Our production team was amazed at how a magazine can survive with no advertising space and a printing time of around four months – ours is three days!

We're not sure what Alan Sugar would make of Dr Rybar's article on the success of the PCW but we can assure him it's reasonably complimentary.

Mementoes of the occasion were exchanged and we look forward to a return meeting in Plzen.



Fooled you?

Ten out of ten if you spotted the fake news item in our April issue about a remarkable new product which could produce colours on your PCW screen, marketed by a certain Japanese Mr Joki Sonyu. The fact that no-one rang up to find out more shows what a streetwise lot 8000 readers are.

There was another unbelievable story on page 61, saying how 9512 and 8512 owners could reformat 706k single-sided discs to get an extra 58k on the (obviously non-existent) 'other side' and how maybe by next April 1st disc prices would have fallen far enough to render this disc-expanding move unnecessary.

If you refused to believe that, minus several million out of ten. It was all genuine. Thanks again to Richard Clayton of Locomotive for providing us with not only a curious little tip but also a neat April fool double-bluff.

MANUAL LABOUR

One of the best programs for PCW is having its potential wasted. Not because its users are unable to comprehend its workings, not because the program is badly designed or hard to use, but simply because the manual is almost impossible to follow. Mini Office's manual is set to become the ne plus ultra of unhelpful documentation, at times it reads like a straight crib from hurriedly scribbled programmer's notes. You get the impression that the writers themselves are just as confused as many of the users now are.

Of course, it isn't unique. In the 8000 black museum there is the 'documentation' for the DK'tronics music interface, an ingenious plug-in module which allows your PCW to play music. Or at least, it would have done, if they'd told you how to do it. You plough through page after page of machine code and technical jargon about envelopes and registers wondering when it'll tell you how to actually get the thing to play a tune. Finally, two pages from the end, it gets to music. 'Music', it says, 'is a series of notes which have mathematical relationships'. And then it's back to the technical jargon.

To be fair, the documentation on a piece of software can't be written until the program is finished. Writing and debugging a program always takes longer than expected, and in the rush to fulfil completion dates, the manual writers may well find themselves hurried into a makeshift job. And yet technical documentation can be good – SuperCalc 2 comes with extensive and clear information for beginners and experts, for example, and you don't hear any complaints about Jean Gilmour's LocoScript 2 manual.

Ms Gilmour can't be the only person capable of writing in normal English about computer programs. Getting a professional writer instead of the programmer's mate may add a few pence to the software, and taking time to produce a clear and comprehensive manual instead of a hastily thrown together fact sheet may delay the launch by a month or two, but I'm sure the PCW owners on the Clapham omnibus would much prefer to wait a few weeks at the beginning for a package they can use, than waste money straight away on one they can't.

Rob

8000 PLUS

The June edition of 8000 Plus will be walking down the aisles of your newsagent on Thursday 26th May.

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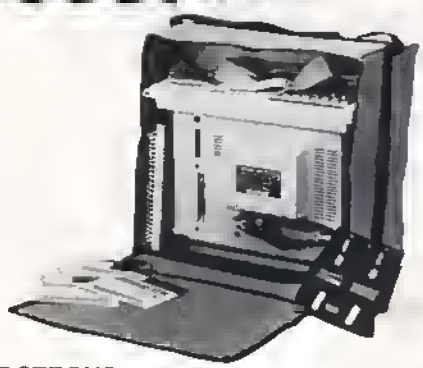

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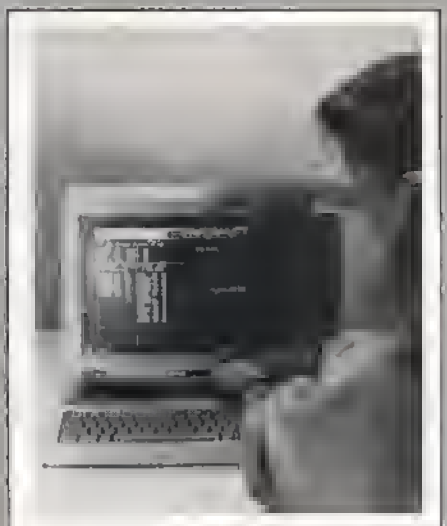
Screen Rip-Off?

Visual Display Technology have launched an attack on other screen filter manufacturers claiming that special protection features on more expensive screens to protect against Infrared and ultraviolet radiation are not needed. To back this up the company quote Professor John Marshall of the University of London Institute of Ophthalmology who has stated in the Financial Times that there is no advantage in special filters to deal with these forms of radiation from VDU screens as radiation output is well below safety levels.

Visual Display Technology, makers of a low priced polycarbonate filter for the PCW are now claiming that suppliers of filters costing more than £40 are overplaying the risks of using a PCW. VDT marketing consultant Barry Smithard said, "It is our belief that many computer users are being ripped off by companies making unsubstantiated claims relating to the kind of filtering which Professor Marshall has now debunked."



▲ The Visual Display Technology screen.

The company state that tests now show that headaches and eye-strain are caused by VDU flickering and reflections of flickering lighting and windows. They claim that their £14.50 contoured, neutral grey plastic filter with its anti-glare matt surface is all that is needed to significantly reduce flicker and reflection problems. For more details phone 01 368 9555.

Protext Power

Protext devotees (especially those running small businesses) will be interested to hear that Arnor have brought out a couple of programs to boost the usefulness of their favourite word-processor. Protext Filer and Protext Office are programs that work inside Protext (just like exec files).

Filer (£24.95) is in effect a database designed to keep address lists and other datafiles in order by allowing you to sort them either alphabetically or numerically. It is claimed you can sort any file (not just Protext) by any field using either fixed or variable length records.

It also has template files for printing standard letters and labels (one two or three across). The data file management features include the ability to check any entry for duplication, search for data, print selected records and print a summary of data using any field all from menus within Protext, like a proper database.

The file sorting program is claimed to be able to sort tabulated columns, sort on any key or multiple keys and to have an intelligent sort mode for names. It also has an option to check for and remove duplicate data.

Protext Office (£34.95) has been developed to handle small companies' invoicing needs. Arnor actually use it for printing all their invoices. All you need to do is set up your company's name, address and product details and, it is claimed, Protext Office will do the rest.

Customers' names and addresses can be taken from a datafile although it can handle one-off invoices. Copies of all invoices are saved on disc and it has the file management facilities of the Protext Filer. For details phone 0733 239011.

Protext Courses

If you're not getting the most out of Protext, Thompson Computers of Peterborough have brought out two on-disc training courses – a Mail Merge Tutorial and a course on 'Advanced Use of Protext'.

The 'Mail Merge' disc has four tutorial files showing how to set up a name and address list, how to merge the list into letters, how to print labels, selective mail merging, printing invoices and quotations and using data from spreadsheet and database programs.

The 'Advanced Use' disc covers setting up layouts, multi-column printing and defining phrases. It also has hints on how to get the best out of printing and two file editing. There is a bit more advanced use not covered (like exec files for instance) so perhaps they are planning an 'Advanced Advanced Use' disc.

Details from Thompson Computers, 8 Hyholmes, Bretton, Peterborough, PE3 8LG

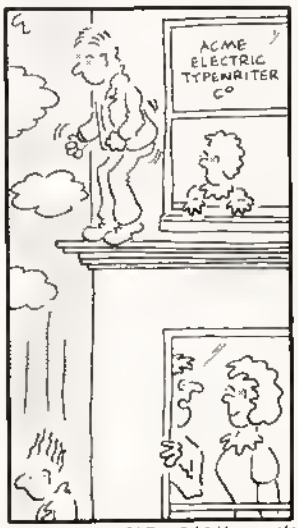
Something in the city

As a sign of what high fliers PCW owners are Meridian Software have released an improved version of Stockmarket, the program that allows you to keep track of your stocks and shares.

They have added a couple of new features, like the ability to save data to the B drive. You are also now able to record tax credits for each of your dividends and you can list entries on any of your accounts between two specified dates instead of having to list all the records. This makes it easy for you to get lists of dividends and tax credits in one year for the tax man. They have also increased the size of the share prices graphs printout.

The program is said to run "significantly faster" and to be identical to the PC version. These improvements have in effect caused a price rise to £39.95 but any existing owners can upgrade for £19.95 if they send back the original discs and the manual.

Despite the stock-exchange crash Meridian are still pleased with sales of Stockmarket. This they think might be because last year anyone could make money out of the stock market, this year they feel the need to be better informed. And for those of you who are too poor to buy shares, well you can buy the program and keep track of the ups and downs without risking a penny. More fun than Space Invaders.



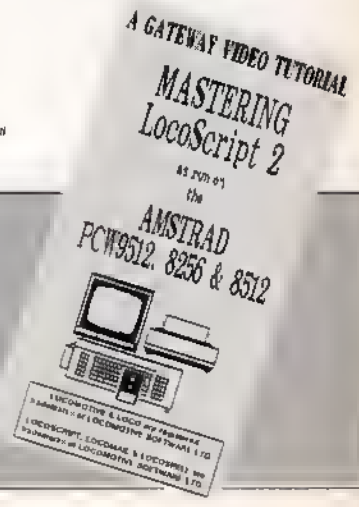
"NO, NOT THE CRASH – IT'S SINCE THE 9512 WAS LAUNCHED"

Get LocoScript 2 Taped

Loco 2 users with manual phobia can breath a sigh of relief. Gateway Video's tutorial tape 'Mastering LocoScript 2' costing £29.50 gives two hours of what is described as "Individual and continuing tuition on a step-by-step basis."

It assumes no previous experience with computers and/or word processors but does cover what are described as "complex operations" such as creating phrases files, templates and document set-up. It is directed by Paul Lavers, currently with Anglia Television, and is presented by Peter Cartwright who has appeared in 'Yes Prime Minister', 'First Among Equals' and 'Cry Freedom'.

The two videos covering LocoScript 2, 'Getting Started' and 'Advanced', are still available at £25 each. For details phone 01 673 0971.



G is for Edit

To edit a document in LocoScript 2 press G for 'Golygu dogfen'. At least that's what you do if you've got the new Welsh edition of Loco 2, because Locomotive have translated the 720 prompts and error messages into that venerated language. The translations have all been carried out by John Hughes, a Welsh speaker and author of books on the PCW.

This makes LocoScript 2 one of only two Welsh word processors available (the other being one for the BBC Micro with limited features) according to Locomotive's Howard Fisher. This at a cost of £29.95, only £10 more than the English version of LocoScript 2.

The only problem is that Welsh Loco 2 cannot as yet handle Welsh spell checking. The company have translated LocoSpell into Welsh but they haven't been able to find a suitable Welsh dictionary on disc.

If you do happen to have the definitive Welsh dictionary on disc phone Howard Fisher on 0306 740606 who is eagerly awaiting your call.

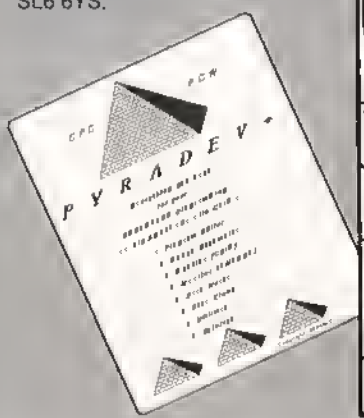
▲ Llanfair pwllgwyngyll John Hughes gogerych wyrndrobwll LocoScript 2 llantysilio gogogoch

Assembler Made Not Too Difficult

Are you fascinated by assembler? No? Pity, because then you would probably have been thrilled by Pyradev+, hailed (by its developers) as "a complete development package for assembler programs".

At present the package is being sold at an introductory price of £19.50 (£14.50 for existing Pyradev owners to upgrade) although a £5 price increase is planned. For this you get what is claimed to be a "very last" full screen editor, a macro assembler which can generate .COM, .HEX and .REL files and a monitor for testing programs (including a dis-assembler).

It also has Disc Nurse (for examining and fixing discs), Disc Clone (for making back-up copies of most discs), a tutorial to explain the features and a number of utilities to copy, delete and rename files. For details write to Pyramid, PO Box 765, Maidenhead, Berks SL6 6YS.



Clock Compatibility

How often have you looked up after a long session on the PCW to find it's several hours or days later than you thought.

A new version of the SCA Interface has been produced that's claimed to overcome all the problems that the early versions had with CP/M compatibility. The interface provides a full RS232 communications port, a full Centronics parallel printing port plus a real time clock and calendar all for only £59.95.

Although the first version was quite well received it did face problems with software that used direct calls rather than CP/M calls. This could be overcome by patching the software but this involved SCA in the tortuous process of providing patches for all sorts of programs including a new patch for every new version of LocoScript 2. Now the interface is claimed to be 100 per cent compatible with the Amstrad interface.

The RS232 serial port operates at between 75 and 19200 and supports split Baud rate as required by Prestel. The Centronics port is a full 8-bit parallel port which will handle graphics. It has a battery-backup real time clock which sets up the minute, hour, second, day and month on the operating system when you start up and allows for date-stamping of files.
For more details phone 0903 700288.

▲ Modular's stacking disc boxes sit waiting to spring into action

Hi-tech Storage

In a determined effort to tidy up PCW owners' desks Earley Marketing have introduced a new micro-disc storage unit that will hold 12 three-inch discs each in their own specially designed plastic disc case. But the real fun is that just by pressing the correct grey 'access button' the special spring action spits your disc into your hand. What could be more hi-tech?

The boxes (165mm by 165mm by 152mm) cost £12.95 each but if you're really rich you can stack them in a modular sort of way using the special clips provided. For details phone 07356 6439.

PCW Suppliers Pull-Out

The PCW industry has lost a couple of its key suppliers in the last month. Liverpool firm Nabitchi Products, who supplied virtually everything from software to the PCWs themselves have now gone into liquidation. And ASD Peripherals who produced hard discs for the PCW have pulled out of the market totally stopping production of their 10 and 20 megabyte discs.

Design Off-Line

Improvements to the Dialup PCW Personal Comms package could save Prestel and Micronet users phone bills. The package now includes a Viewdata Editor which allows users to prepare mail messages off-line (before they link up to their Viewdata service) saving connect and telephone bills. Product Manager Sue Froggatt stated "Users can also design their own own frames with colour, pictures, graphics and text." These can be based on existing screens or they can be designed from scratch.

Another improvement is that it now supports more modems (Pace Linnet 1200, Pace Series 4, Propak and Astracom) and it has more parity options. Dialup users also have access to Dialink, an on-line service with comms information, tips and an Email facility (Electronic Mail to the uninitiated).

Dialup recently had a boost when it was chosen by Telemap Group Ltd, who operate Micronet as the software offered with their Propak package. Dialup costs £89.95. For more details phone 021 643 7688.

LocoScript 2 is the new word processor for your PCW8000. Now, for just £34.90, you can get LocoScript 2 complete with LocoSpell, the integrated spelling checker and corrector.

• Faster movement around documents • Jump direct to a page • Word count facility • Save and continue from last position • Improved character shapes on the built-in printer • Choice from over 200 matrix, daisywheel or laser printers (may require the Extra Printer Drivers Disc) • Extended range of characters and symbols • Greek and Cyrillic text • Accents with any character • Improved word processing features • Printing of multiple copies • Disc copying and formatting direct from LocoScript • Check spelling without any disc changes • Correction of simple typing mistakes • Three dictionaries supplied by Longman, the largest with over 77,000 words • Your own dictionaries of special words and names • Online dictionary for looking up difficult words as you type • (SiC) marker for special spellings • Completely revised user guides

The LocoScript 2 Family *from* LOCOMOTIVE SOFTWARE

LocoMail adds a complete programming language to LocoScript 2 – but don't panic, you can use it simply and powerfully for your mailshots too.

• Produce a mailshot by merging a standard letter with a mailing list • Produce letters for each name or data record, or just for a selection • Include special text depending on the data to be merged – each version of your text is correctly laid out, whatever special information you insert • Edit the merged letter before printing • Save the result to disc if required • Use LocoScript data files or ASCII data files from a CP/M program • Prompt for information to be typed at the keyboard • Perform arithmetic within LocoScript documents • Produce sophisticated LocoMail 'programs' for Invoicing, Credit Control, Enquiries etc.

LocoMail now comes with a completely revised 288 page User Guide – available separately for users of the PCW9512 and earlier versions of LocoMail.

• An extended tutorial section • Detailed descriptions of the advanced facilities • Worked examples of "program units", loops and conditional operations • Descriptions of typical uses of LocoMail – Club Membership, Invoicing, Enquiries, Labels • A set of "building blocks" to incorporate in your own LocoMail applications • Full technical description of LocoMail • Troubleshooting guide

All the examples are supplied on the LocoMail master disc, or on the LocoMail Examples Disc, available separately.

To: Katy Buchan, Locomotive Systems
Allen Court, Dorking, Surrey, RH4 1YL
Phone (0306) 740606

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☐	LocoSpell (for LocoScript 2.03 or later)	£19.95
☐	LocoMail	£29.95
☐	*NEW* LocoMail User Guide	£14.95
☐	*NEW* LocoMail Examples Disc	£5.00
	Total	_____

☐ I enclose a cheque payable to Locomotive Systems Limited

☐ Charge to my Access Card

Note: All prices include VAT and UK postage.

DOUBL

Ask anyone who's used both the single-drive 8256 and the twin-drive 8512 and they'll tell you there's no comparison. As well as the extra storage space you get from that B drive, you can copy discs much more easily. There's also the luxury of leaving your program disc in one drive and your data disc in the other, saving all that tedious disc-swopping. Upgrading your 8256 to an 8512 is a standard and straightforward procedure; all you do is buy the drive and basically slot it into the space where the name plate is – all the fittings and wires are already there.

That's all very well, 9512 owners will be thinking, but what about us? Well, the 9512, just like the 8512, comes already set up to expect a second drive to be fitted. All the internal connections are there, and for just over a hundred pounds you can buy the extra drive and fit it yourself. With two drives you have 1400k of storage space, more than a twin drive PC can boast!

Upgrading needs no mechanical skill or computer knowledge – just an hour or two of your time. Certainly the ease with which the 9512 upgrade can be carried out makes some of the inflated prices being quoted for a dealer upgrade seem harsh. For only £119 (including first class postage) the Cornish firm Silicon City provide a new off-white drive with the correct fittings and a comprehensive set of instructions. Dealer upgrades are being quoted at up to £200.

The upgrade involves little that could be considered difficult and it'll certainly speed up all those file transferring and backing-up tasks that seem to take up so much of your life.

With cream or black?

Anyone who has owned an 8512 knows all about the drive on the new 9512. It is the one that uses the so-called 'one megabyte' (1024k) disc format which for obscure technical reasons gives you 706k of space from a three-inch disc. You can read a 173k disc (for 8000 series A drives) on the drive but can't write to them. There are minor differences in the workings of the 9512's B drive (the FD4) and the 8512's (the FD2). For instance, Silicon City have found changes in the wiring to the pick up which they suggest would give added protection against corruption. However, to all intents and purposes they carry out the same task.

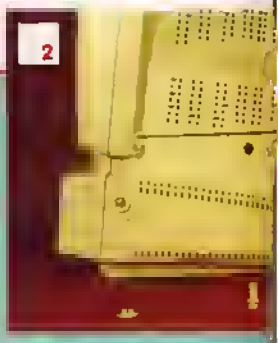
This means that the new FD4 B drive provided by Silicon City can be fitted successfully in both the 9512 and the 8256. There are obviously cosmetic differences. For a start the FD4 is a light cream colour rather than the traditional black of the FD2. The colour was chosen to specifically match the 9512 but it also matches the the 8256 surprisingly well although it does cause a second glance from anyone used to seeing an 8512.

The most obvious difference between the machines is that they need a different metal sleeve. In the 9512 the drive is screwed in horizontally while the 8512 drive is fitted vertically. The drives coming from Amstrad provide both sleeves giving you the choice as to which one to use, while Silicon City ask which machine you are fitting the drive in and provide the correct metal work. It is reasonably obvious whether you have the correct sleeve – the 9512 has four lugs two on either side (fig 1) while the 8512 sleeve has three (fig 1b).

Also worth noting is that the drives come from the manufacturers with a cardboard 'disc' in place. This should be removed by pressing the eject button and you should not try to replace it. The kits from Silicon City already have this removed and there is no mention of it with the instructions.

Daunting misconception

At first sight the Silicon City instructions could appear daunting. Three packed pages of text would seem to



9512 upgrade

One thing about the 9512 is that it doesn't come apart as easily as the 8000 series machines. There are the four obvious screws on the back to loosen the casing but there are also a couple hidden under plugs at the side. The brightness and contrast controls on the right hand side of the machine also should be removed now (see fig 2).

The next instruction may seem strange at first. You are told to ease the back out about an inch. This is because you are just about to lift it off upwards so you have to clear the edge connector that sticks out in the expansion port (see fig 3).

The most obvious difference when you open the 9512 is the two large horizontal printed circuit boards right in the centre of the workings. These boards are the key to the operation with most of the work separating them and physically removing the top one and the monitor tube to open the space needed to fit the drive.

There are a couple of wires connecting the two boards that must be loosened. First is a five-way connector coded CP005 (fig 5) on the right hand side of the lower board which is pulled off horizontally and at the back of the lower expansion board a four-way connector CP006 (fig 6) has to be pulled upwards. CP006 could cause a little problem as it is in a more restricted area and it is quite stiff to move. The trick is to find the small cut-out and spring the plastic shoulder to make life easy. Always remember to pull the plastic part of the connector and not the leads.

Creamy note

If you want to do your own upgrade using the new cream FD4 contact *Silicon City, Dept 8, Wheal Rose, Redruth, Cornwall TR16 5DA* (0209 891141) – state which machine when ordering. It's £119 (inc.VAT and first class postage). They also provide memory upgrades for the 8256 for £34.95. An upgrade pack with memory chips and an FD4 costs £142.

Black magic

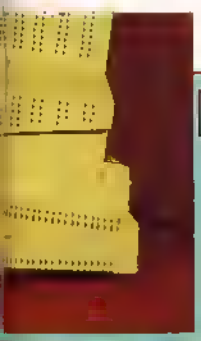
FD2s (the black B-drive) can be got from *Alfa Electronics Ltd, Maple House, 97 Ewell Road, Surbiton, Surrey, KT6 6AH* (telephone 01-390 2588). This costs £113.85 or £154.10 with memory upgrade.

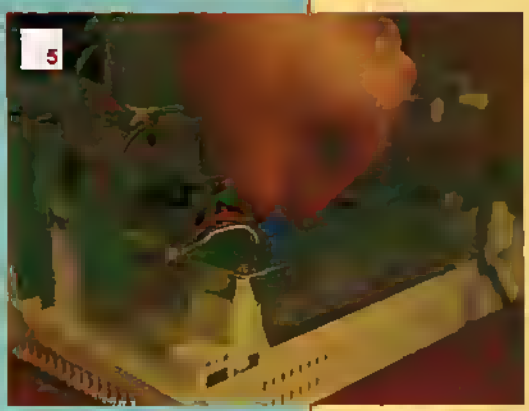
Colour codes

In a modern standard plug, neutral is blue, live is brown, and green and yellow is earth. There are mnemonics to remember this by, but none of them make any sense.

E YOUR DRIVE

Add a drive to your PCW! So simple, even Alec Rae can do it...





1 How to recognise the disc drive for the 9512
2 Remove the brightness and contrast buttons and the side screw
3 Slide the top back about an inch
4 Loosen CP005...
5 ...and CP006
6 Working loose the black wire
7 Swivel the whole top of the PCW forward

Next stage is to loosen the wire which connects the two boards towards the rear of the right hand side (on most machines it'll be black). This is screwed to the top board near the mains cable earth wire. In the computer we upgraded the black wire was tied to the mains earth with a nylon strap but with a little careful manoeuvring this could be slipped through the gap without cutting the tie.

Then all that needs to be done is to give yourself enough slack on the mains cable to allow you to part the two sections of the computer without straining. This involves loosening the moulded grommet which holds the cable in place and pulling about three feet of slack out the side. You can only use this method if there is room on your work table to store the two sections side by side. It is possible to pull the wire clear completely to allow you to store them separately if there is no room. The instructions suggest that most 13 amp plugs can be manipulated through the gap but in our test the plug had to be removed.

The parting of the boards

Then comes the part that could rattle the nerves a little. You have to remove the two pairs of screws that fasten the tube and top board to the base (they are pretty obvious) and then you simply tilt the whole front of computer forward to an angle of 30 degrees to the base. Until you see it actually part in a natural way (without any sharp cracks of breaking plastic) you might doubt that this is correct but it is.

From this position you simply lift the newly freed section from the base and lay the front panel face down on a non-scratch surface – an old blanket is ideal.

Now an amazing vista opens up. You see the top of your present drive and alongside it four neat fixing columns sitting ready waiting for your new drive. In front of it is the blanking panel that has to be removed. This is easy. Not only do you have excellent access to both sides (fig 9) the plastic legs which hold it in position do not have the same stubborn strength as the ones in the 8256. Cut through the outer side of the four plastic legs with side cutters or a Stanley knife; alternatively, peel off the name plate and cut from the other side using a hacksaw blade. You may need to clean up the edges with a Stanley knife to ensure that the drive fits in cleanly.

The multi-way ribbon cable and four-way DC power cable which fit in the back of your drive are actually hidden away under the existing drive. It is a reasonably intricate job cutting these wires loose from the nylon strap and pulling them free in the restricted area but nothing to worry about.

To fit these into the back of the drive you are probably best to remove the back plate, a matter of loosening one screw and slipping it off. This certainly allows you to see the fitments that will receive the cables. These are pretty obvious except that you have to remember that the red strip on the ribbon cable should be towards the four-way cable connector. A glance at the other drive confirms this. Slip the back cover on before you place the drive in position because there isn't much room once it's in place.

What you need: 9512
One Phillips (crosspoint) screwdriver. One pair of side cutters/a hacksaw blade or a Stanley knife. A fairly large work space covered with an old blanket or other non-scratch material.

suggest that it is a complicated job. But this is misleading.

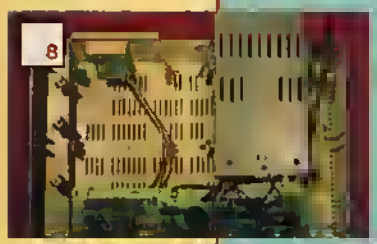
The instructions go into a lot of detail to make the operation as tool-proof as possible and you have to carry out a large number of small tasks, involving simple things like unscrewing screws and loosening wires. The actual work involved in fitting the new drive is sublimely simple.

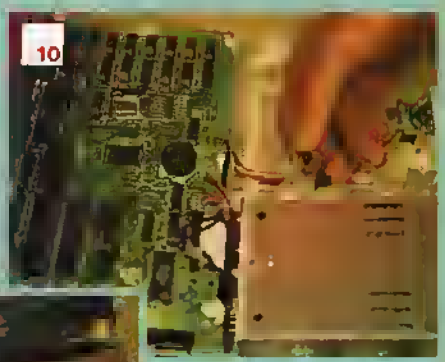
There are some nerve-racking moments the first time you take your computer out of its cover. The instructions may seem clear enough but there is always the nagging doubt that you will misunderstand and by accident break something vital. For instance you are told to swivel the whole front of the computer forward at one point to remove it – an action which at that moment doesn't seem obvious.

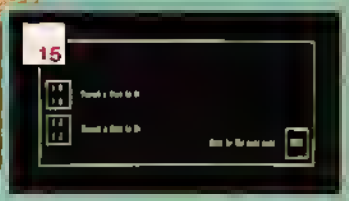
To help offset this the Silicon City instructions go out of their way to be helpful. It may look like overkill to be told to "put the screws away somewhere safe" but it is the sort of thing that you always forget to do and regret later.

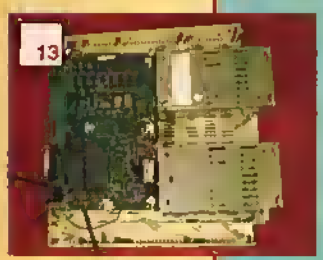
In the same vein all the instructions about discharging yourself of static electricity before you start work may seem like alarmist mumbo-jumbo but it certainly is true that static can build up in some people (especially in an office environment with nylon carpets) and this could conceivably damage the delicate electronic circuits.

The instructions insist you unplug the computer and suggest that you leave it for about a minute for the residual voltages to discharge. Opinions vary on how long the PCW does take to discharge these quite high voltages. This would only be a problem, however, if you were to touch the copper wire windings on the tube; as you are better not touching anything you don't need to touch, this wouldn't appear to be an excessive risk.









8 Where the new drive goes is obvious
9 The back of the blanking plate
10 Pulling free the ribbon cable and wires
11 Where they fit in the new disc drive
12 Fitting the earthing wire
13 Everything in place: start fitting it together again
14 What a two-drive 9512 looks like
15 The moment of truth – the 9512 recognises that it has two drives

You then screw three corners of the drive down to their mountings. The one you leave has to take a black earthing wire just like the one you will see screwed to the top of the existing drive. The instructions suggested that they had found the two wires screwed to the top of the A drive while we found it bound up with other wires by a couple of plastic cables, both of which had to be cut to get it free. Whichever way you find your 9512 there is no problem in picking out the right wire.

This fits between the nearest screw and the lug. If you have had to remove the earthing wire from drive A you have to remember to replace it before you start re-assembly.

And back together again

The instructions then give you another half page of details on re-assembly although most of it is self-evident. The are a couple of tricky parts. One is replacing the top half of the innards (tube and top printed circuit board – the reverse of the tilting act) an action that is probably easier to do than describe. The other is sliding the top cover into place and making sure that all the protruding odds and ends, especially the expansion port edge connector, are lined up before you push it closed.

Once everything is back in place you have that nerve-tingling moment when you start up and watch anxiously for the '2 disc drives' startup message. The ultimate test is of course to format a disc in your new drive using Diskit but once this is done you can breathe a sigh of relief that you have completed a job well done.

Verdict

Although there are quite a number more small tasks involved in the 9512 upgrade none could be regarded as difficult. You need no skills other than the ability to use basic tools and follow instructions, and the 9512 internal design helps greatly by giving you plenty of unrestricted access to the important parts. Silicon City's instructions ease you through the process without problems.

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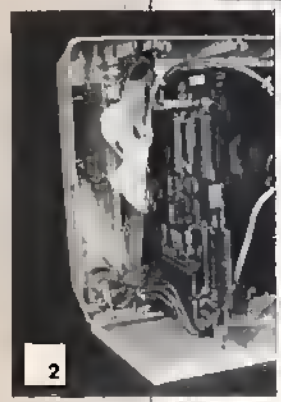
The 8256 upgrade

The idea of an 8256 upgrade has been around ages, but it is still to be seen whether the FD4 will take off as a fashion for the 8256 or not. As the FD4 is designed to be fitted horizontally the actual flap for inserting the disc is a bit to the left of normal. But the cream drive matches the 8256 well and it is just personal taste whether you prefer the traditional black drive for an 8000 series machine.

There is little difference in the way the FD2 and the FD4 operate although Silicon City point out that the FD4s are the drive for the new machine and therefore less likely to become obsolescent. In the ephemeral world of computers this may count for something.

The 8256 instructions in comparison seem surprisingly simple hiding the fact that there are one or two tricky moments that need special attention. The same safety precautions apply as with the 9512 – unplug the machine, leave some time for the residual voltages to discharge and don't touch anything you are not supposed to touch. Taking the back off is no problem – the six screws that need loosening are easy to pick out. Just be careful you don't damage the edge connector that sticks out the expansion port. The instructions suggest taking off the base pedestal although this doesn't seem necessary.

1 How to recognise the sleeve for the 8256 upgrade.
2 Where the drive will go. Pretty obvious
3 The blanking plate that has to be removed.
4 The finished picture - the cream FD4 in place.



Obvious but not easy

As soon as the back is off it becomes obvious what needs to be done. The cables that are to be fitted to the drive (tied up in a nylon strap) are prominent and the space where the drive will go can't be missed. By looking at the existing A drive above it you can quickly see the set up that you will be using for the B drive. However you still have to carry out one or two tricky operations first.

Unlike the 9512 you have to remove the blocking plate from the outside. This involves peeling back the metal 'Green Monitor' plate below the A drive. This exposes the six plastic legs that hold the blocking plate in place. Cut these with side-cutters or a small hacksaw (be careful not to cut any wires).

These legs are made of reasonably tough plastic and the top legs especially are not too easy to get at but these are not major problems. Use a file to smooth off the edges if necessary to allow the new drive to fit smoothly.

The best way to work is to lay the PCW flat on its screen so have your blanket handy to make sure it doesn't get scratched. Positioning the drive on its mountings is relatively easy. Getting the screws into these mountings is frankly a bit of a problem. This has nothing to do with the FD4 (the FD2 had the same problems) but rather with the very restricted space available. There are perhaps fingers long and thin enough to do it but they won't belong to a human.

Sticking point

The instructions suggest all sorts of weird and wonderful schemes including Sellotape, tweezers or thin pliers. However without doubt the sensible way is the old Blu-Tack method. Put some of this useful material on the head of the screw and then stick it on your screw-driver. You can then accurately place the screw in place and tighten it. This is also where the long bladed screw-driver comes into its own. Without a six-inch blade you will not be able to tighten the screw between the two disc drives.

Cut the plastic strap that holds the ribbon cable and the wire with the four-way dc cable connector and pull them free. Again looking at the A drive makes it obvious what you are doing. The only point to remember is that the wide ribbon cable must have the blue stripe to the top.

Lift it up to see that the drive has come through the space properly and then fit the back on again. When you start-up you should notice that the opening screen says 'two disc drives' and that Diskit should give you a lot of interesting new options (such as formatting a CF2DD disc in B drive). There are tricky moments but the 8256 upgrade is well worth while. Now you have all the fun of discovering what a second drive can do for you.

EXIT

What you need: 8256

This job needs two Phillips crosspoint screwdrivers – one at least six inches long (vital for working in the restricted area) a pair of side clippers or a small hacksaw blade and an old blanket or other non-scratch surface. There is one vital omission from this list – a small amount of Blu-Tack.

How to improve your memory

For a complete upgrade to 8512 standard you need to beef up the memory from 112k to 368k. This doesn't actually increase the space that the computer runs programs in (the 'transient program area' – yes, that's what the '61k TPA' message you see when CP/M starts up is on about!) but it does allow you to hold over three times as many files or programs on the M drive. You can put your favourite programs and utilities (like BASIC or Diskit) on the M drive and call them up at a moments notice. Some programs, like Mini Office, won't work from the memory.

How many drives do I need?

If someone has grown up with a one drive machine it might not be obvious why they want another one. The first advantage is one of space. An 8256 can store 173k on each side of the disc in the A drive. On a B drive you have 706k available, *but* you can only use the disc one way round. The reason is that the B-drive reads from both sides of the disc at the same time (which means you don't have to keep turning it round, another advantage). 9512 owners simply double their capacity from 706k to 1412k.

You also can save yourself time and trouble by cutting down on disc swapping. For instance you can leave your program disc in the A drive and save data to a drive in B.

The other major advantage is when you want to transfer files from one disc to another. Without having to bother with M drive you can move files or complete discs using Diskit. Obviously this will be a real time saver in backing up discs on the 9512 (700k of information can take a while to copy) but you can still copy complete CF2 discs on an upgraded 8256 (the B drive can read information from an 'A drive disc' although it can't write to it. The A drive can neither read nor write to 'B drive discs'.) You therefore put the disc to be copied in the B drive.

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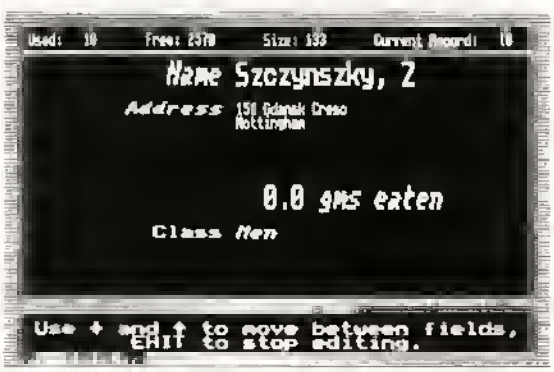
SORT IT ALL OUT

Trouble with sorting or printing your data? Part 2 of our series on how to get the most out of Mini Office's database

As a Mini Office owner you have been delegated the job of keeping the records for the World Poppadum Eating Championships. You've already set up a database with the entrants' names, addresses and classes, and you've left a field for 'amount', currently blank, to take the amount of poppadum each entrant eats in two minutes.

As each contestant finishes, you can enter their amount, and when the last contestant has finished you can immediately print out the finishing order, split into the different classes (Women, Men, and Junior categories).



▲ The database you've set up - 'amount' is as yet blank, of course

Perhaps you also want to run off some address labels, one for each contestant, so you can send out the result lists afterwards.

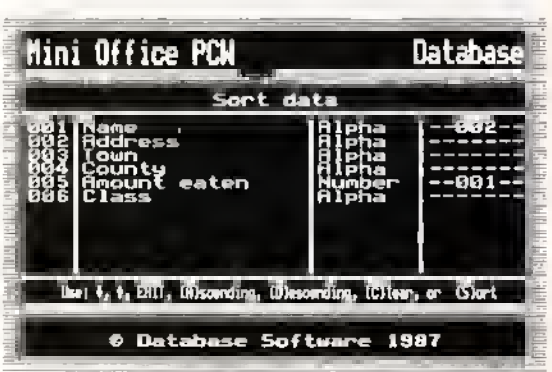
Search me

The contestant A. Rae has just finished, scoring 122 grams. You want to find his record and add his score. Take the 'Search and Mark data' option from the main menu. You are shown the list of fields you defined; select 'Name' (or whatever you want to search on). Give the name you want to find as 'Rae'. Next use the cursor keys until the 'search criteria' column on the right of the Name field shows *= which instructs Mini Office to search and earmark all records which contain the letters 'Rae' somewhere in the name – the names 'Raeburn, Anna', 'Boyle, Raelene', and 'Rae, Alec', will all be selected. If you're absolutely sure the name is recorded as 'Rae, Alec', of course you can give this as the text to find and specify = instead of *= as your criterion. Pressing S puts the searching and earmarking into action.

Now you're back in the 'display' mode, with one of the marked 'Rae' cards on the screen. It has an asterisk at the top right hand side – Mini Office has tagged all the 'Rae' cards for you, as you requested. As usual, you can move to the next cards in the sequence either way by the right or left cursor keys, but you can now move to the next tagged card by the up and down cursor keys (or the first/last cards in the database if there are no more tagged ones). Once you've found A. Rae's card among the tagged ones, all you have to do is press 'E' for edit, use the cursors to move through the fields, and enter his score in the 'Amount' field.

Sort it out

When the contestants have all finished, you can do a quick sort on the results. You might want the finishing order for each class, and maybe an overall finishing order to let the Juniors see which adults they beat. First the overall order. Choose 'Sort data' from the main menu; you see the list of



fields again, and can choose the ones to sort on, the obvious one being 'Amount'. You want high scores first, ie. in descending order, so press D. If two or more amounts are the same, you will probably want to sub-sort alphabetically so use the cursors to move on to 'Name' and press A for ascending (ie. alphabetical) order. Mini Office will tell you that Amount is index field 001 and Name is index 002; you can make your sub-sorting go to practically as many levels as you like.

Now press S for sort, and you'll see that the records now appear in a new order, of descending amount, and the record numbers at the top right hand side have changed accordingly. You might want to save this, using 'Load/Save' from the main menu, as ORDER.DBS perhaps.

Perestroika note

If you haven't set up a field for 'Amount', you can just add it on to the existing database using the 'After Structure' option from the main menu and pressing A for Add. You then set the field details as normal and Mini Office automatically rearranges all your data accordingly. Not many database programs let you do this!

Go directly to...

A smarter way to find each person's card is to assign each competitor with a number – the number of their record on the pre-competition version of the database. This is the one which appears at the top right hand corner of the screen card. It will be the order in which you typed the names in.

When Rae, competitor no. 16 finishes, you can go straight to his record by choosing the 'Edit' option from the main menu, selecting 'Goto' record 16, then pressing 'E' to edit the record and insert the amount as above. The only snag with this is that if you sort the records into a different order, the numbers change too. (Sort into alphabetical order and Aardvark will now be record 1, Abacus no. 2, and so on). So, if you want a permanent record of the old competitors' numbers, you'll have to keep a copy of your unsorted database saved somewhere.

Mini Office PROFESSIONAL

Now for the different classes. First you want to get just the Juniors. Using Search and Mark, as above, give the field to search on as `Class`, the search data as `Junior`, the criterion as = and when you press S for search all the 'Junior' records will be marked with an asterisk. You can save just these records to a new file, `JUNIORS.DBS` say, without affecting the old one. Just go through 'Load/Save' on the main menu, selecting the 'save marked records' option, and giving the name `JUNIORS` when prompted. As the file they came from was already sorted into order of amount, the Juniors sub-set will be too.

You can now do something similar for the Men's, Women's, Senior Citizens classes etc., saving each to a separate file. You'll have to unmark all the Junior records first, though – do this via the 'Clear data' option from the main menu, choosing 'Clear markers'. Then continue with Search and Mark as above.

There are plenty of other sorts you can do. You could just get a list of those who managed 150 grams or more by

▲Defining your label formats

giving 'Amount' as the field to search on, `150` as the data to find, and >= as the search criterion. You'd save these marked records as `TOPTEN.DBS` perhaps. Conversely 'Amount', `20` and < would mark out just those who'd managed less than twenty grams. You can specify virtually as many search conditions as you like, so you could select all Women who'd managed over 100 grams, or all non-Juniors who got less than thirty, for your wally Hall of Fame.

Going to print

Once you've used 'Load/Save' to load in the database you wish to print out, you have a variety of printing options in Mini Office. There is 'Reports/Labels', which lets you print only the items you want from each card (say just name and address for address labels, or just name and amount eaten for the results list) and involves you setting up formats to do this. For rough-and-ready résumés though you can get quick printouts of records. Take the 'print' option from the main menu. The three 'print styles' which you can run through using ENTER are draft, high quality (NLQ) and 'graphic' – this last option will print out your card as you see it on the screen, with all the bolds, dims, italics, fancy typefaces etc.

The others just print straight characters. Your other options let you separate records with nothing, a line, or a form feed (ie. a new page), print the field names in italic, normally, or not at all, and print the totals of each field at the end of the run if you want.

To print out your records, select either 'print all records' or 'marked records' for just the ones you searched and marked. If you want just one record printing, you'll have to search and mark it out individually first. Note that all your numeric fields are printed at the far right hand side of their fixed allocation of 20 spaces – you'll have large gaps between your field name and your numbers and there's nothing you can do about it.

Write your reports

For 'proper' printouts, define a Report/Label format. Choose the 'Edit Report/Label' option from the main menu. You want to define and save two formats: one for name and address labels, one for your finishers' list.

The finishers' list is to have on each line the amount eaten and the name. Hence in reply to the prompts on the menu, you want 'Number across page' to be 1, 'characters across page' to be 80 or so, 'Report depth' to be 1, 'suppress excess spaces' to Y (otherwise numbers take up 20 spaces!) and 'gap between outputs' to whatever you like. It's hard to see what use 'tab settings' are as the TAB key is used for something else. You can set the required figures by using the cursors to select an option, pressing ENTER, deleting the old figure and entering the new one, confirming with ENTER.

Now you can define the position of the fields. Select 'Edit Report/Label'; you'll see a wide one-line deep 'label' on screen. You can place the amount (field 5) on screen by pressing PASTE followed by 5 at the required point. COPY lets you set the style of the field on printout (italic, bold or underline) and TAB lists the field numbers for you if your memory needs jogging. PASTE 1 puts the name on to the label'. Save this format (you have to EXIT back to the main menu and choose 'Load/Save') as FINISHRS.FRM. While you're in Load/Save, you can load up the file you want to print in finishing order. Select 'Print Reports/Labels' from the main menu, setting figures appropriately from the prompts, and then choose 'Print'. Your list is run off, continuously if you haven't read the margin note.

Set up your address labels similarly, saving the format as LABELS.FRM. You can get two or more labels across the page here, and this time you'll want six or so lines as your label 'depth'. 'Test print' shows you how the labels will print out, using asterisks instead of names and addresses, and is a good way of checking your format is OK before committing yourself to a full run.

To print out the other lists, load up the required file (JUNIORS.DBS or whatever) and the required format (LABELS.FRM and so on) and then select 'Print'. EXIT

```
128.6 gms - Simmons G
126.7 gms - Hardcastle JM
124.0 gms - Arkwright WJ
122.0 gms - Rae A
121.9 gms - McLeish F
121.9 gms - Morrison GW
118.7 gms - Bale K
117.9 gms - Meddings S
117.3 gms - Neal A
116.5 gms - Wilson D
115.8 gms - Anderson CJ
115.5 gms - Taylor D
113.2 gms - Miller J
112.6 gms - Wade B
110.9 gms - Johnson WW
110.5 gms - Harris H
110.5 gms - Szynsky Z
```

▲Your finishers' list

No good at numbers

Unfortunately there's no way of including the record number in your sorted list printout – ie. you can't put the competitors' positions in. More powerful databases, such as Masterfile 8000 or dBase, will let you do this.

It's more fun single

Yes, you *can* print out on single sheet paper with the database! Either press the RTN key before the end of the first page, use the cursors and the ⊡ key to set 'Paper out defeat' to off, and resume with EXIT; or put a disc with PAPER.COM on it (it's on one of your systems discs) and type `PAPER A4 P[OFF]` RETURN before running Mini Office.

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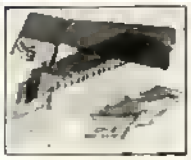

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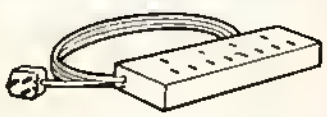

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How Fireman David Tatum became an ardent PCW fan

If there is such a marital status as being a Computer Widow, my wife informs me that she fits that position with the same certainty that Easter will arrive next year. Having been married to a fireman for more years than she will admit to, living a solitary life at night times and holidays is an existence that most wives in similar circumstances either cope with and accept, or vanish into obscurity attempting to come to terms with.

Every Fire, Road Traffic Accident, Flooding, Chemical Incident, Special Service and cat stuck up a tree requires at least one report – sometimes two, occasionally three. In a Brigade that responds to over 60,000 calls a year, that amounts to a fair amount of time spent at a typewriter. With Divisional Officers not being known for their understanding of "why that report was not on my desk at 0900 hours" (in most cases they have used the same excuse themselves and thinking of a new one becomes increasingly difficult) any way to speed up the procedure would be welcome.

I had decided that although a programme of restructuring the administrative side of the Brigade was imminent, such an undertaking would take several years and that in the intervening period I could put the PCW to work in compiling most of the reports that inevitably arise during an average day on a busy operational station.

Locoscript 1 and 2 quickly overcame the difficulty on narrative type reports. These are submitted mainly when the circumstances surrounding the fire do not appear to be all they should, as it were. Using separate groups to cover the varying topics and creating slightly different templates, I was able to make up a disc that held around forty reports on each side, identified by the date, which was entered year-month-date (ie 871102.001 for the first incident on 2nd November 1987), with any subsequent incidents on the same day being numbered 002 etc. This made location of reports, now filed by LocoScript in date order, a simple task and although an additional copy is printed for my own file at work, the original is available on disc at home, for the occasions when an urgent telephone call queries a particular point.

In the main however, reports are submitted on standard forms with information being entered into designated boxes or areas. It was for this type of report that I decided a TEMPLATE.STD in Locoscript was not the solution.

Do it yourself

The answer had to be a purpose-made Basic program that not only allowed the user to enter information and amend it, but prevented a section from being missed out, (reports have a habit of returning if you omit the address) and then to print the completed document onto the form.

My knowledge of programming was confined mainly to typing listings from magazines and books and this almost exclusively on the Electron, using BBC Basic. Although Basic languages appear similar in many respects they can be as different from one another to seem like comparing English with Dutch, or maybe English with Double Dutch would be more appropriate.

The inital problem was to try and clear the screen – who would have thought that PRINT CHR$(27)+"H"+CHR$(27)+"E" would have replaced CLS? – but there we go. However, perseverence and the purchase of the excellent book 'Mallard Basic, Introduction and Reference' though I might add 8000 Plus, eased the problem considerably. Before long I was writing complex programs that checked gas and electricity bills (you may laugh but it's a start). Then it was onto serious matters.

The first program to be attempted was one to cover Special Service reports. This is a two page document, used in cases ranging from Road Traffic Accidents down to little Johnny wih his head trapped in the railings. Page one is completed on all occasions, with page two if there may be a charge for the service rendered: this, I hasten to add, is only in rare circumstances. However, page 2 created the greatest problem, as the times in and out of the station of a particular appliance have to be entered on the form, because the ultimate cost to the occupier is based on the number of hours worked. Although our wonderful admin. girls would calculate the total times, VAT and cost, I programmed the computer to do the work, hopetully easing their work-load at the same time.

Actually cajoling the program to print the information on the report where it was required, seemed at first a

Where's the fire?

During 1986 my employers, the West Midlands Fire Brigade (the largest in the country next to London) started to introduce keyboards, printers and VDU's onto the stations, governed via a main-frame computer at Headquarters. The decision had been made to fully integrate computers into the service, which would 'control' the mobilising of appliances to incidents and, backed up with a massive street database, improve the overall response times.

The aim was to reduce the amount of air traffic being used with radio messages and eventually create a Management Information Systems on stations, to assist with the increasing administrative work.

monumental task. Fortunately a study of the pages in the Amstrad manual located the relevant section and soon the printer was working overtime. It is actually quite satisfying to watch the paper scroll up several inches and then start printing details where you intended it to go.

Share it

Having completed the job and tested it by submitting my own reports using the computer program, (it must be OK, because none have been returned so far), I offered the program to other members of the Brigade through an article in our own magazine. This meant that a simple tutorial had to be written.

Whilst all this high-tech programming had been going on, the usual steady flow of bills, demands for money and occasional shopping trips had either dropped onto the doormat or required some of the time to be spent away from what had become an obsession. The decision to introduce at least one of these minor discomforts to the world of computing was made. After all, the correct management of money is important to us all and if computers are good enough for banks then they are good enough for me.

After reading the review of Double-Jay Software's 'Cashbook 8000' in the November '87 issue of 8000 Plus, I sent off for the program. Almost by return of post the disc was delivered along with the "comprehensive manual"; the suppliers' words not mine. The program is run after first loading CP/M and is extremely easy to use. I particularly liked the repeat posting facility and the statement print out was along the lines of that used by most banks. On two occasions discrepancies were highlighted against the official bank statement, and surprisingly it was the bank that had made the errors.

Within a short time all details for various accounts were on the computer and the program protected using the password facility. Actually it is quite easy to discover the password, but my wife has not yet mastered the inner secrets of CP/M. I think I may be able to hide away a few more pounds for that next program purchase. Overall the package is well worth the £13 asking price and although the manual is poor the program is so simple to use it does not really matter.

And so it goes on...

Response to the use of the Special Service program was greater than I had expected and as I had by then written additional programs, most colleagues were given more than one. Based on the original format these proved easier, due in the main to the programming experience gained from writing the first program, and also from the fact that subsequent programs could use a proportion of the original listing. Some of these provided initial hiccups, such as how to overcome not being able to display on screen the complete contents of one page of a report. The answer to the problem was to display a portion of the page, print it and without removing the report from the printer, display the additional screens and print those, until the form was completed.

Back-up copies of all the programs were made and to help protect the equipment from the cyclone of dust particles that vacuum cleaners generate, I bought a set of dust covers from BBD.

"That's it then," says Lynda, "all finished".

"Well not quite," I try to explain, "there's FDR1's, 021's, 023's, TRI's Fire Prevention forms and I wouldn't mind having a go at writing a database for my record collection, and then of course there's..."

What does it mean when your wife glares at you, mutters something and walks out?

EXIT

Art thou weary

Having always been a bit of a doodler, brother's Electric Studio light pen and Art program was borrowed for a week. At first it was great fun, but after a while I decided that I couldn't really think of a serious use for the program and the sixty pounds plus asking price was safe for the time being

The price is right

The PCW was not my first experience with computers. Sinclair's ZX81 was the first culprit, purchased brand new for the incredible price of less than twenty pounds. Although it was capable of performing amazing feats it didn't quite feel right, there was no proper keyboard, memory was extremely limited and consequently programs somewhat restricted. However this did not defer my enthusiasm, in fact it had completely the opposite effect and subsequently I bought an Electron. This was much better: a proper keyboard, masses of memory and terrific fun.

Unfortunately, I was now completely hooked, and the computer started to take control, like one of those mad machines in a Sci-Fi movie.

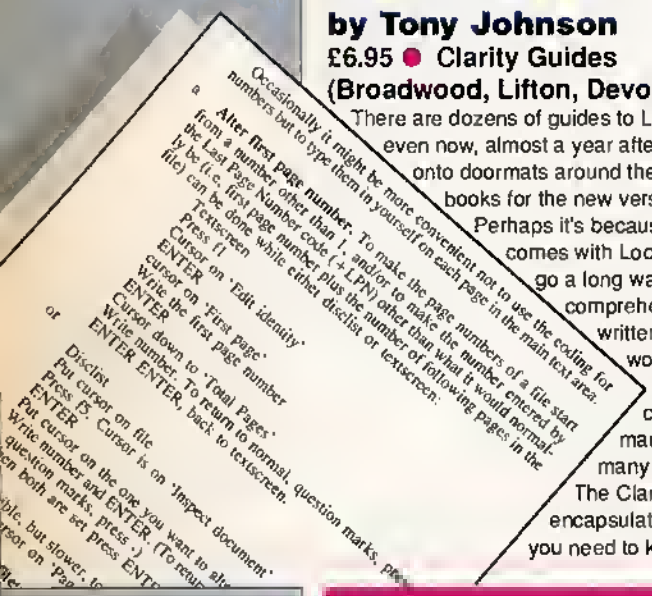
Any sane mortal would have stopped here. Having to use computers at work should put payed to wanting them at home, but towards the end of 1987 I started looking around the high street shops for the next acquisition. Having read many reviews on different computers I was most impressed with the facilities available on the Amstrad PCWs and trial run with my brother's 8256 made me all the more determined that this was the computer I had been searching for.

Around three weeks later Amstrad dropped the price of the 8000 series. That was the final arm-twisting I needed, and I bought PCW8256. (I may not exactly purchase state of the art equipment, but I seem to find the right price. The ZX81, Electron and Amstrad were all bought after a large price reduction... buyers of 9512's please note).

BOOK LOOK

A new guide to LocoScript 2 and a book for all legal eagles reviewed.

CLARITY GUIDE TO LOCOSCRIPT 2
by Tony Johnson
£6.95 ● Clarity Guides (Broadwood, Lifton, Devon, PL16 0ER)


Occasionally it might be more convenient not to use the coding for numbers but to type them in yourself on each page in the main text area.

After first page number. To make the page numbers of a file start from a number other than 1, and/or to make the number entered by the Last Page Number code (+LPN) other than what it would normal-ly be (i.e. first page number plus the number of following pages in the file) can be done while either disclist or textscreen:

Textscreen
Press f1
Cursor on 'Edit identity'
ENTER
Cursor on 'First page'
ENTER
Write the first page number
Cursor down to 'Total Pages'
ENTER
Write the number. To return to normal, question marks, pa
ENTER ENTER, back to textscreen.

or

Disclist
Put cursor on file
Press F5. Cursor is on 'Inspect document'
ENTER
Put cursor on the one you want to al
Write number and ENTER. (To requ
question marks, press .)
ENTER both are set press ENT

There are dozens of guides to LocoScript around, but even now, almost a year after Loco 2 finally dropped onto doormats around the country, only a handful ot books for the new version have come out.

Perhaps it's because ot the manual that comes with LocoScript 2 – you'll have to go a long way to find anything more comprehensive and as clearly written. But every PCW owner works in his or her own way, and the very comprehensiveness of the manual can be daunting tor many people.

The Clarity Guides set out to encapsulate in 114 pages everything you need to know about LocoScript 2 but can't remember off hand how to do. It's basically a collection of crib sheets telling you how to set up and create a new paper type, how to print directly onto envelopes, how to insert a tile into another, and so on. Everything is cross-referenced by page number, so you can chase up any terms you don't understand or techniques you've torgotten. LocoSpell and LocoChar are covered, plus the usual LocoScript procedures of setting up layouts, setting page numbers, manipulating blocks, using templates, operating the printer etc. There are briet but compact notes on disc management and touch typing, general advice on coping with long documents and so on. LocoMail isn't mentioned though.

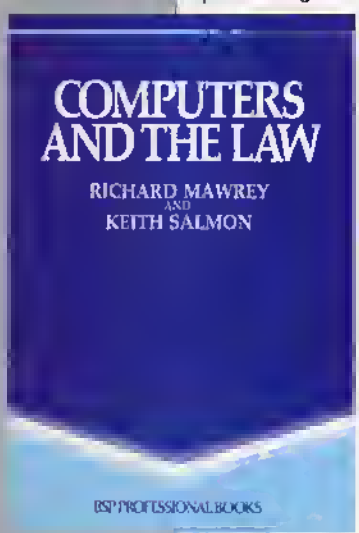
A curious teature ot the book is the author's liking for concatenated words – given that it was written with LocoScript 2, you wonder what LocoSpell must have made of 'disclist', 'templatestd', 'textscreen' and 'linespacing'.

This isn't a book to be read at bedtime, it's definitely a work of reference, which tells you what to do rather than explain why you're doing it. As such it has the usual advantages and disadvantages of the prescriptive approach – it enables even beginners to get results straight away, but isn't so good tor making you understand exactly what's going on.

Everyone's way of working is different, and no one book is going to please all the people all the time; but for those who want to do something and just want to be told how to do it, step by step, without ploughing through pages of a manual, the Clarity Guide is a well set out and useful aid which will save you a lot of time and frustration.

Clarity Guide to LocoScript 2
ISBN 1870075 01 3
8000 Plus Value Verdict ■■■■※

COMPUTERS AND THE LAW
by Richard Mawrey and Keith Salmon
£19.95 ● Blackwell Scientific (0865 240201)



The legal and computer worlds have a lot in common. Both are complex, exclusive, jargon-ridden, and take up huge amounts ot your time and money. Modern business is so reliant on information technology now, and the workings of computers and computer systems are so involved, that peculiar legal situations can arise and there's otten no 'common sense' way of seeing how they should be resolved. What happens when you suffer losses in your business through computer tailure? It you buy goods and they are not ot 'merchantable quality', you can get a retund – but what constitutes 'merchantable quality' tor a piece ot software? What it you commission a programmer to write software for you and he or she goes away and markets it on their own, making a vast protit out of your ideas? What if the package they write for you has a bug, affecting one of your customers and causing.them to sue you? The questions are endless.

Messrs Mawrey and Salmon cover the above questions and just about every other conceivable computer situation, showing in straighttorward layperson's terms what the legal position is. There are large sections on Contracts, Liability, Tort, and Damages; the book also shows you 'for the first time' how to calculate consequential loss from computer failure.

Jargophobes can rest easy; this is a very readable, very clear guide to all the legal aspects ot computers – not a single 'Notwithstanding...' or 'Whereas...' in the book! It's all done in an easy-going style which nevertheless gives you all the terms and cases you need to quote if you are to bluff your way past your lawyer. ('As you'll remember from Pharmaceutical Society ot Great Britain *v.* Boots Cash Chemists (Southern) Ltd, 1953...')

Ot course it's not PCW specific, and it'll only be ot relevance to business users rather than PCW hobbyists, unless they have a particular interest in the law. There's a section on the intamous Data Protection Act, though few PCW owners are going to lose sleep wondering it they need to register themselves purely on account ot their Sumo Fan Club database. (As the book explains, unincorporated clubs don't need to anyway). However, if your PCW is central to your business, and you want to know in reasonable detail what your legal position is in case X, Y or Z happens, this is exactly what you want. And considering how much time and advice you'd get from your solicitor for £20, it does represent pretty good value tor money. EXIT

Computers and the Law
ISBN 0 63201849 6
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BOOTIFUL TURNKEY

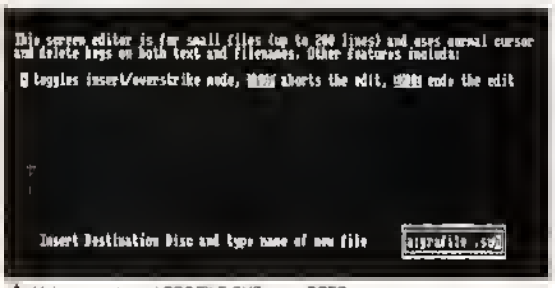
Make your programs run themselves!

Every month somewhere in the magazine there are blasé reterences to 'putting this in your PROFILE.SUB tile' and 'making a startup disc'. It you're not well acquainted with CP/M you might wonder what the fuss is about.

Normally, when you run a program that you've bought – SuperCalc, Mini Office, or perhaps your BASIC programming work disc – you first have to get CP/M running by inserting the CP/M disc you got with the PCW and switching on (or resetting it by pressing SHIFT EXTRA and EXIT together, which does the same thing). Atter the opening messages come on the screen, an A> appears. This is CP/M's little way of saying 'tell me what to do now'. You would then insert your SuperCalc, Mini Office or BASIC work disc, type the correct file name followed by RETURN, and the program loads and runs.

A startup disc is one which you have tixed to run the program on it automatically – you just insert the disc, switch on or reset the computer, and sit back. You can make a startup disc tor most programs.

So what? Doesn't this only save you tour seconds' worth



▲ Making up a typical PROFILE.SUB using RPED

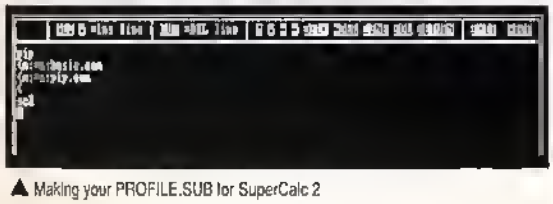
of typing? Well, a startup disc enables your CP/M-blind employees or friends to operate your programs, but the great thing about it is that you can automatically carry out a series ot commands through a sneaky device called your PROFILE.SUB tile.

Basic example

Suppose, for example, you dabble in BASIC programming. Every session might begin by you running CP/M, and copying BASIC.COM to the memory, maybe DIR.COM and PIP.COM too. You do this because running BASIC from the memory is much taster than running it from disc, and if you want to use DIR or PIP you have them available any time from the memory and don't have to hunt around changing discs. So you had to type `PIP M:=BASIC.COM`, and then eventually run BASIC with `M:BASIC`. Doing all this at the start ot every session can quickly get boring – which is where your PROFILE.SUB file comes in.

All you do is to put all these commands you'd normally type in at the keyboard into a short text file called PROFILE.SUB. You make up this file using RPED, a text editor on your systems disc – about which more in a minute.

The mechanics of a startup disc are as follows. When you put a disc in and reset your PCW, it is geared to look tor a file ending in '.EMS'. This contains all the guts of CP/M



▲ Making your PROFILE.SUB for SuperCalc 2

(the 'operating system'). When it's loaded all that, you get the A> prompt. Now CP/M looks for two files: PROFILE.SUB and SUBMIT.COM. The first is your list of commands to be executed, the second is the phantom operator who types them in for you. If both of these are present on the disc, SUBMIT swings into action and types in all the commands it

▲ Making your PROFILE.SUB for BASIC

▼ All this is done automatically when you insert your BASIC startup disc and reset

A boot by any other name

'Boot', 'startup' and 'turnkey' discs all mean the same thing. 'Startup disc' is the recommended one to use of the three, having an upmarket, 80s feel to it. 'Boot disc' is OK but isn't quite as stylish. 'Turnkey disc' is archaic, a real 50s hackers' term. It only survives because of the potential for puns in computer magazines.

RPEDtime story

According to legend, RPED was written for a bet when its programmer was challenged to write a full text editor in BASIC. The RP in RPED reputedly stands for his initials!

Amaze your friends

PROFILE.SUB's powers extend beyond just getting a program running. Commands from it can still be executed after a program has finished – for example, after using SETKEYS and then running BASIC, you want to set the keys to a different set. You'll now have in your PROFILE.SUB:

```
SETKEYS BASIC.KEY
BASIC
SETKEYS OTHER.KEY
```

After leaving BASIC this second setkeys command will automatically be executed for you.

You can also get PROFILE.SUB to enter commands for you from *within* the program you're running! Suppose, for example, that on running BASIC the first thing you always do is to run a program called ZAP. You can put this command in your PROFILE.SUB to be run from within BASIC with the lines

```
BASIC
<RUN "ZAP
```

You can do a similar thing with PIP -see the PROFILE.SUB for BASIC above

Note that you can run the commands in PROFILE.SUB any time by typing `SUBMIT PROFILE`. You don't need the .EMS file on the disc, but you do need SUBMIT.COM.

That's not all

There a lot more things you can put in your PROFILE.SUB. (To add any of these to your existing PROFILE, use RPED again, selecting the 'edit existing file' option f1):

SETDEF
If you're copying a lot of files into the memory, as above, but you want to work in the A: drive, you have to type an `M:` before each command – `M:BASIC`, for example. Using SETDEF, however, you can tell the PCW to look for .COM files (DIR, BASIC, PIP etc.) on the memory first, and *then* look on the drive you're currently using (the 'default' drive). You only have to type `BASIC` etc. without the drive in front. The line to include in your PROFILE.SUB is `SETDEF M:,*`

Of course you'll need SETDEF.COM from your CP/M disc on your startup disc.

SETKEYS
You can use this to redefine the keyboard so that just by pressing f1, for example, you automatically enter `BASIC` RETURN, or by pressing f7 you get `SYSTEM` RETURN. You need two files on your startup disc, SETKEYS.COM from your CP/M disc, and a text file containing the details of your key configurations, called BASIC.KEY say. You create the text file using RPED. This was covered in March's 8000 Plus, and there are details on it on page 108 of the 8000 CP/M manual (page 541 of the 9512 manual). The line to include in your PROFILE.SUB would be `SETKEYS BASIC.KEY`.

PAPER
Sets up the printer to work on certain types of paper. Mini Office, for example, expects 11" continuous paper but if you include the line `PAPER A4 P[OFF] D` in your PROFILE.SUB this sets it to single sheet A4.

SET24X80
This is necessary for some games which expect to work with a 24x80 screen (the PCW's is 32x90). On Hitch Hiker's Guide to the Galaxy, for example, this has to be in the PROFILE.SUB or you get screen corruption. The line to include is `SET24X80` though you'll rarely need it.

SETSIO
Comms lovers only! Sets up various parameters for your modem.

sees in PROFILE for you. For example, PROFILE would contain all the command lines like `PIP M:=BASIC.COM` and end with `M:BASIC`. Of course, you'll also need PIP.COM, BASIC.COM and so on on your startup disc.

This is what you do

So here's your step-by-step guide to making a BASIC startup disc. On resetting the machine and inserting this disc, it will startup the machine, copy DIR.COM, PIP.COM and BASIC.COM to the M drive for you, and then run BASIC.

First you need a blank formatted disc. The files you want on this disc are the .EMS file, PROFILE.SUB, SUBMIT.COM, BASIC.COM, plus PIP.COM and DIR.COM (or any other files you want to copy to the memory). All except PROFILE.SUB, which you have to make up yourself using RPED, are on your systems discs, so you can copy them on to your startup disc with PIP. (Put your CP/M disc in the drive and type `PIP` followed by `M:=*.EMS`, then `M:=PIP.COM` and so on for each file you want to copy. Then put your blank disc in and type `M:PIP A:=M:*.*`).

Now if you do a `DIR` on your startup disc you should see the files `J`(something)`CPM3.EMS`, `SUBMIT.COM`, `BASIC.COM`, `PIP.COM`, `DIR.COM` plus any others you copied on your disc. All you need do now is make up your PROFILE.SUB. This requires the text editor RPED on your CP/M disc or your word processor if it has an option to save text in ASCII form.

Insert your CP/M disc in the drive and type BASIC RPED. When the opening screen comes up, insert your new startup disc and then select f3 'Edit new screen' giving the new filename as PROFILE.SUB. Up comes RPED's editing screen; just type in the commands you want to be executed on startup, ending each with a RETURN:

```
PIP M:=BASIC.COM
PIP M:=PIP.COM
PIP M:=DIR.COM
M:BASIC
```

EXIT finishes the edit and your startup disc is complete. On resetting the machine it should crank up automatically.

Self-starters required

All this is fine if you want to make a BASIC startup disc – but what about your spreadsheet, database, wordprocessor etc.? The manual should tell you the files you'll need on your startup disc, (as well as `J`(something)`CPM3.EMS`, `SUBMIT.COM` and `PROFILE.SUB` together with the command lines you should have in PROFILE.SUB).

Always work with copies of your programs on blank discs – never, ever try to put the files on to your existing master disc. Note that, in general, you need at least 48k of space on your disc after you've copied the program files on to it (they'll end in things like .COM, .BAS, .OVL – your manual should tell you which files are necessary). If there isn't enough space, you won't be able to make a startup disc.

This applies in particular to Mini Office. You can't get more than one of its programs on a startup disc. However, you can try this: make a startup disc containing the .EMS file, SUBMIT.COM, OFFICE.COM, and PROFILE.SUB containing your PAPER command (see the box) and the line `OFFICE` RETURN. You'll need a separate disc with a copy of Mini Office as well. Insert this when told to do so (it will say Insert a certain side of Mini Office in drive A) and continue as normal.

It boots not

Done all this and your disc just won't start up at all? There is another format for PCW discs, 'data format' which gives you an extra few k of space, but can't be used as a startup disc. For example, if you've copied Mini Office side 4 with DISCKIT and added the .EMS files etc, it won't start up, as the format's wrong. You have to use a freshly formatted disc to give the right format and PIP the required files across.A number of games can't be made into self-starting discs. For example, Scrabble can't be copied, and has no room for files to be added; and Tetris won't work on a startup disc. We've no idea why. EXIT

Protext note

Protext has its own equivalent of PROFILE.SUB called STARTUP – see the manual for details.

Copyright note

If startup discs are such a good idea, why didn't software manufacturers sell them as such? The reason is one of copyright – the .EMS file and SUBMIT.COM were written by, and are the property of, Locomotive, so if anyone else sells it as part of their software they're breaching copyright.

▼ The directory of a SuperCalc startup disc. These are the files you must have – you could add others such as SETKEYS.COM, PAPER.COM, SETDEF.COM etc (see box).

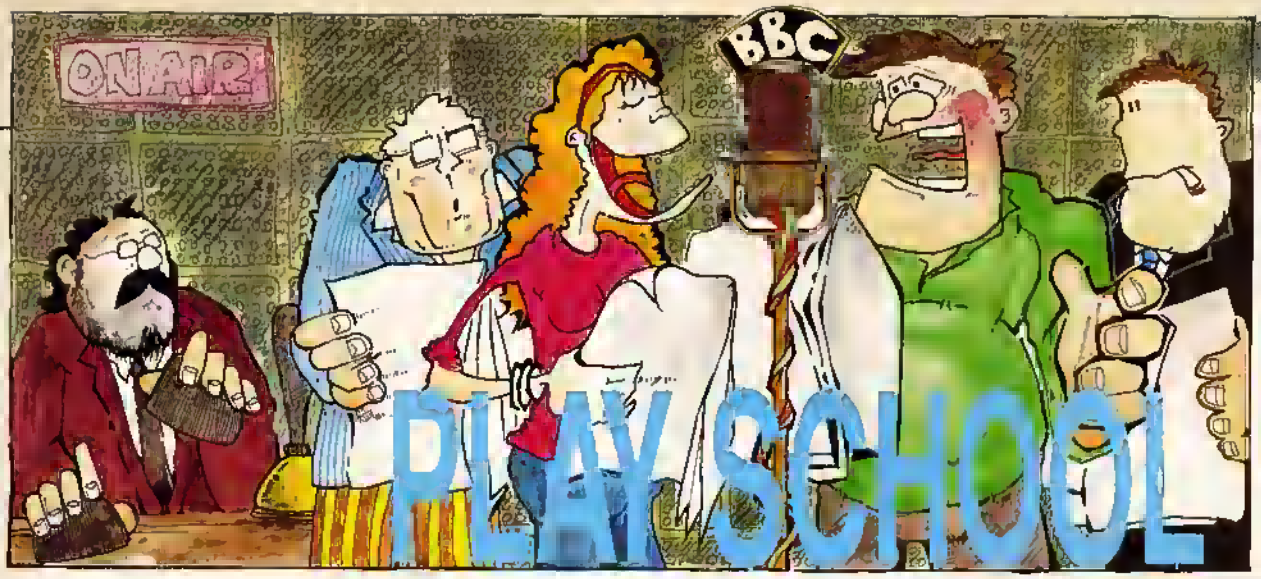
The file which actually runs the program ends in .COM

.OVL, or 'overlay' files, are add-on chunks to the main program, and must be there on you startup disc

SUBMIT.COM is the phantom operator which keys in the contents of PROFILE.SUB for you

PROFILE.SUB is a simple text file, and contains the commands you'd normally type in at the keyboard, one of which runs SuperCalc

The .EMS file cranks up the machine after resetting it



One of the tasks for which a PCW is eminently well suited is the business of laying out plays. Hacking through five properly laid out rewrites on a typewriter would be enough to make Hercules go back to mucking out stables, but on a PCW, even ordinary mortals can produce perfect results with ease.

Both LocoScript and Protext have a bunch of facilities to take the tedium out of organising your layouts. This is about radio play layout, but applies pretty well to other forms of play too.

Normal single-spaced, 12-point NLQ from your dot matrix on continuous paper will be perfectly OK. 10 point daisywheel output on a 9512 will be even better. Sound effects are preferred to be in capitals and underlined; directions in speech can be likewise, or in italics. Here's the sort of layout you might find on a typical page:

(FADE UP INTERIOR OF PLANE IN FLIGHT, IN THE BACKGROUND, A STEWARDESS IS SERVING PASSENGERS WITH DRINKS.)

SMYTHE: (Over intercom) This is the captain speaking. It appears that one of our engines has developed a fault, and we are therefore only running on two engines. There is no cause for panic, but as we running on reduced power, we may be ten to twenty minutes late arriving at Reykjavik. Thank you.

(GROANS FROM PASSENGERS)

JONES: Damn! That means we'll miss the last bus to the hotel.

BROWN: Yes. That's rather annoying. By the way, what's the in-flight film tonight?

JONES: Airport 77.

SMYTHE: (Over intercom) This is the captain speaking. It seems one of the other engines has stopped working now. This will make us approximately fifty minutes late at Reykjavik.

JONES: Hmph! I hope the last one doesn't pack in as well, or it'll be hours before we get there.

Page 45

LocoScript

The most important thing to remember is the use of hanging, or indent tabs. Normally, if you press the TAB key, you move to the next tab position, the tab showing on screen as a →sign. When you get to the end of the line, the text at the beginning of the next line goes against the left-hand margin. However, if you press ALT TAB, shown on screen as a ↔, when you get to the end of the line, the next and all subsequent lines start at the position of the tab, and on finishing the paragraph with a RETURN you revert to the usual margins, as in the sample above. This is obviously what you want to use when typing in characters' lines and the sound effects. (The double indenting of sound effects is achieved just by a tab followed by a hanging tab).

So, for the group which is to have your plays, you first define a template with tabs set appropriately. Press C for 'Create document', giving the name as TEMPLATE.STD.

Layout on the line

LocoScript 1: Press f7, Modes, ENTER to 'Edit header', then f7 'Options'. Press f8 to set the first page number (you'll need this if your play is split into chunks) and then hit ENTER.

Now you can set the layout for your plays by pressing the ↓ cursor and placing margins with f1 and f2, and tabs with f3. EXIT EXIT ENTER gets you back to the header and footer screen; place your page number in the footer 1 using ⊡C to centre the text and typing `Page `, ⊡PN to insert the number and three = signs to allocate the space for it. EXIT and ENTER back to the main document.

In LocoScript 2: Press f2 and select 'Change layout'; you go up into the ruler line at the top. The margins will probably be right already (if not, move the cursor to 10 and select 'Set left margin' to f1, then move the cursor to 85 and select 'Set right margin' from f1. Now you can put the tabs where you want by moving the cursor to the position required and pressing the ⊡ key. You only need two, and sensible places to put them might be 30 and 35. Pressing the ⊟key will erase a tab. EXIT finishes the layout changes.

You won't need headers or footers; all you need on each page is the page number. Do this in your TEMPLATE.STD in the usual way. Hit f1 and RETURN for 'Document setup' and move the cursor down to header 1 'used for all pages'. Press ⊡CE then type `Page `. Then tell LocoScript to insert the page number by ⊡PN followed by three = signs. A few EXITs and ENTERs take you back to the disc manager.

Now every time you create a new document your tabs and pages will already be set correctly. The usual rules on file size apply – a forty-five minute play might be 80k, rather unwieldy for LocoScript, so it's best to keep things split up in smaller documents of 15k or less (In Loco 2 you then must ensure the page numbers run on for each document using f5 from the main menu, selecting 'Set counter=first page'

Auntie says

This is what the BBC says about the layout of radio material:

1. Scripts must be typed or printed. Please use one side of the paper only.
2. If you have the choice, please use A4 paper
3. Names of characters should be clearly separated and should be given in full throughout; you know may who A and B refer to but the reader doesn't.
4. Sound effects and other technical information should be clearly differentiated from speech.
5. Pages should be numbered consecutively. Rehearsal scripts also number each speech, starting afresh from the top of each page, but this is not necessary when first submitting.

▲ Showing those phrases in LocoScript 2

for the first document, and 'Set first page=counter' tor the rest. [CAN] tinishes).

Phrase it right

One of the most trustrating things when typing out plays is having to spell each character's name out in tull all the time: a clear case for LocoScript's 'phrases'. Instead of typing out `HETHERINGTON:` or `FARQUHARSON:` and a hanging tab each time, you just press [PASTE]H or [PASTE]F. You set up phrases as tollows.

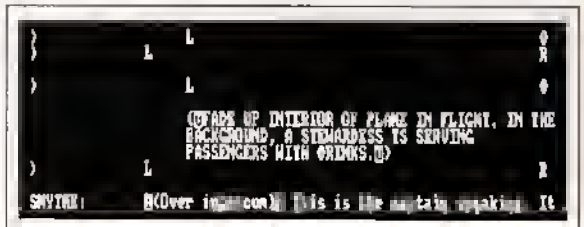
While editing any document, type out the name ot a character, followed by a colon and a hanging tab. Press [COPY], move back to the beginning ot the name, press [COPY] again and give an appropriate letter, probably the initial one, to remember that name by. Repeat for each character. When you've finished, [EXIT] (you can abandon if you like).

LocoScript 1: While editing your template, press [f8] tor 'Blocks' – you'll see the letters which currently have phrases allocated to them. Select the 'Save all phrases' option and [EXIT] the document. In the disc manager you'll see in group 0 of drive M a file PHRASES.STD – to be able to use these phrases you've just detined in subsequent editing sessions as well as the current one, copy this file to your startup disc. You may have to erase the old version of PHRASES that's already there, or rename it if you want to keep it for later.

And now on Two...

LocoScript 2: From the disc manager select [f1], 'Actions'. If you now select 'Show phrases' from [f1], you should see the phrases currently in memory. It there are any spurious ones hanging around under other letters, you can delete them with the ⊡. If you switch off now, the phrases will be lost, so choose 'Save phrases' trom the same menu and save them under a suitable name (say PLAY.PHR) to the group of your plays.

In the future, before a session on your play manuscript, you must first put these phrases into memory by moving the cursor over PLAY.PHR, pressing [f1] and selecting 'Load phrases'. You can then insert them as normal, by pressing [PASTE] and the right letter.



▲ How your layout switching looks in Protext

I must Protext

There isn't quite the same 'hanging tab' concept in Protext; it's handled trom the ruler lines. Remember your layout at any point in a document is determined by the currently active ruler line, which holds the positions of the tabs and margins. These ruler lines must start with a > at the left hand edge, with the right hand margin denoted by an R. Tabs are marked by a | sign, and you can have one indent tab, marked by an L.

To cope with the sound effects tabbing and the speech tabbing, you'll want two ruler lines defined, enabling you to swop between the two. So, at the top of your play document, you want two lines:

```
>          L                                   R
>            L                                 R
```

respectively for speech and sound effects. For a similar layout to the one detined in LocoScript above you might have the L's at 20 and 25, the R at 75, and a stored command `>SM 10` as the first line of your document to set the side margin to 10. To select 12-point type you need the code [ALT]Xe before your text. Now you can swop between the ruler line which is currently active and the other one at any time in the document by pressing [ALT]R.

Text is automatically aligned with the position of the L, and to get back to the left-hand edge of the page you press [SHFT][ALT][EOL] together.

Witness the execution

Your phrases are put into memory as follows. Create a file on your plays disc called PLAY.PHR say which looks like:

```
KEY H "HETHERINGTON:^9"
KEY F "FARQUHARSON:^9"
```

etc. To put these phrases into operation, go into command mode and type `X PLAY.PHR`; from now on in a document, pressing [EXTRA] and the appropriate letter will type the appropriate phrase and tab tor you. (That ^ is got by pressing [EXTRA] and it carries out the instruction '9' which is the Protext code for a tab).

Your page numbers can go in the footer. To insert a footer you just put the line `>fo`(a tew spaces)`Page %%%` at the top ot your document.

To switch underline on or off in Protext, for those sound effects, you press [ALT]XU. It might be an idea to put the phrase

```
KEY U "^24^u"
```

in your PLAY.PHR as then you can insert the code tor underlining just by pressing [EXTRA]U. Similarly the line `KEY I "^24^i"` lets you insert the italics on/off code by pressing [EXTRA]I only.

Easy as 1,2,3

Protext's flexibility comes into its own when you want to add the speech numbers to pages. They are numbered trom 1 on each new page and help the readers refer to speeches easily. Though not absolutely necessary on your first submissions, it looks good.

The problem is, of course, that editing can throw the numbers out, meaning tedious renumbering. In LocoScript the only way to do this is manually, but using Protext's 'execute' facility, you can do all this automatically to the version ot the document in memory and then print it out, leaving the master untouched.

Make your phrases file before you start work on your play look like this:

```
KEY H "^HETHERINGTON:^9"
KEY F "^FARQUHARSON:^9"
```

etc., putting an asterisk in front of each name.

Make sure there's enough space before the tab position to accommodate the numbers when they go in. Then decide the maximum number ot speeches per page in you play. It's unlikely you could get more than twenty on a page.

Now create a file on your plays disc called NUMBER containing the lines:

```
|252||220||252|FIND *
1. |16||241||252|FIND *
2. |16||241||252|FIND *
```

and so on, down to

```
20. |16||241||252|FIND *
21. |16||241||252|FIND * B
|252|X NUMBER
```

[EXTRA]. gives you a |. To turn all those asterisks into numbers, put the cursor at the end of the document, go into command mode and type `X NUMBER`. You'll see all the hard work being done for you (try to ignore the beeps!) When it's tinished you'll see a spurious X NUMBER somewhere on your tirst page; edit it out and then print the document. With long documents (over 15 pages say) this can take a few minutes, though you could always split it up into smaller chunks.

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PITTING YOUR WITS

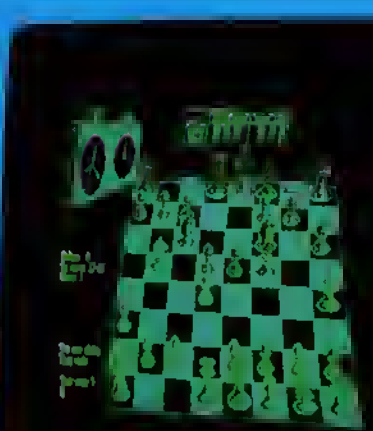
Chess, backgammon, draughts... all classic games of skill. New versions out this month from CP Software look set to give you a hard time. Ben Taylor and Mark Sayers check them out.

Way back in 1952, the American mathematician Arthur Samuel caused a sensation by writing a program for his IBM mainframe computer to play draughts. This really caught the public's imagination, since they hadn't seriously considered the possibility of computers playing games before, and the draughts program was hailed as the advent of the 'intelligent computer'.

Since then of course, computer games have become big business. Despite the onslaught of the zap-'em-'n'-whap-'em arcade games, the old family favourite board games still retain their aura of skill. This month sees the release of three versions of classic games from CP Software: chess, backgammon and draughts. Can your PCW give you a serious challenge?

Checkdate

Although no-one wrote a Chess-playing program until the late 1950s, the rules for computer chess were laid out by Claude Shannon in 1949, so in some ways chess predates draughts as a computer recreation. In 1977 a computer programmed at Northwestern University first beat a Grandmaster.



▲ In a spot of bother against Clock Chess 88

▲ The opening setup for CP Software's Backgammon

CLOCK CHESS 88

£15.95 ● CP Software (0993 82 3643)
● All PCWs

It's still fashionable to scorn chess computers as mere brute force automata, as capable of subtle endgame play as Mike Tyson is of dancing Swan Lake. Yet the best programs now can beat grandmasters occasionally, and chess-playing computers have won major tournaments against human opponents, though you can't expect your PCW to play like a Kasparov or a Karpov.

CP Software's '3-D Clock Chess' was always highly regarded as one of the better PCW chess programs. With Clock Chess 88 they have produced a completely rewritten version, which claims stronger play, better tactics, and more openings.

The board is drawn in 3-D and moving your pieces can be done either 'algebraically' (entering `D4-E4` according to the standard system) or more intuitively by moving the cursors. There's a 3-D chess clock in the corner of the screen, recording your times automatically, though the timing itself seems a bit suspect occasionally!

You can set the level of play by specifying an average time limit for the PCW to 'think' about its moves, anything from a few seconds to infinity (it recommends this option for those checking out the best move in chess played by correspondence, leaving the PCW all night to work out *exactly* the best move, which seems a bit of a tiddle!). You have a variety of options such as printing out a record of all the moves in the game, printing a position, setting up a specific position to get the PCW to examine the tactics for you, etc. Chess buffs might be interested in the 'Kriegspiel' and 'blindfold' options (how can a computer play blindfold?) and you can even adjust the 'aggression' of the PCW by instructing it under what circumstances to play for a draw.

However, for the serious or semi-serious player, the most important thing is how well the program plays. Chess computers have weaknesses and strengths. While a computer is easily able to recognise the win of a pawn on a crowded board, it is much more difficult to program it to understand why a advanced pawn may be either a weakness or a strength depending on the position.

The result is that while chess computers are strong in the early part of the game, possibly even a long way into the middle of it, and soon as the 'endgame' has been entered their playing standard diminishes rapidly.

Opening up

Openings are usually computers' strong point,but Clock Chess is exceptionally good. Because it can store the opening moves of a huge amount of games, if the player sticks to a standard opening few moves the computer 'knows' the standard response just by looking it up in its 'openings book', without having to calculate anything. The crucial point is how far into the game it can rely on this – how well it knows its book. Clock Chess knows it extremely well – on several occasions it was still doing 'book moves' twelve moves into the game, far better than most humans! Of course you can throw it off its book by playing 'surprise' moves early on, but these will probably be weak ones. You can add your own 'book' moves if you wish.

In the middle game, how strong the chess program plays depends on the sort of game which is played. Adventurous lines are best avoided as the computer will quickly pick up any mistakes which might be overlooked by a human opponent. However even in quieter games the computers' ability to exhaustively search each possible series of moves still gives it a good base to work on.

As with all computers, Clock Chess cannot play a sacrifice – where you give up a piece in order to gain a stronger general position even though there's no immediate prospect of regaining a piece. To gauge whether a sacrifice is correct or not is hard even for the great players.

Endgame

As with all chess programs, the weakest part of Clock Chess's game. The programmer has attempted give greater weight to pawns which are nearer queening, but the play still seems a bit naive in this area. A strong club player would need to know openings very well to keep up with Clock Chess, and would need to play on top form in the middle game. However, if it was level on entering the endgame, you'd expect the club player to win most of the time.

All in all Clock Chess is very good. It's enjoyable to play against, and the graphics are well done too – and certainly in strength of play it's the best of those available for the PCW.

Play the rates

Clock Chess 88 is rated at 165 BCF, about the same as a strong club player. Grandmasters are around 240 BCF and normal beginners 80 or so (child prodigies such as Capablanca and Alekhine rated over 100 before they could read or write). Ratings for computers are difficult – in the endgame, for example, Clock Chess only seems to play as well as someone graded 120-130.

BACKGAMMON

£15.95 ● CP Software (0993 82 3463)
● All PCWs

Backgammon is a strange game, a mixture of skill and luck. A good player will usually beat a bad player, but since each

CLOCK CHESS 88

PLUSES
- Full range of levels of difficulty
- Prints out moves, screens etc.
- Wide variety of features
- Very strong play
- Very large opening library

MINUSES
- Like all chess programs, endgame not so good

RANGE OF FEATURES	■■■■■	STRENGTH OF PLAY	■■■■■
GRAPHICS	■■■□□	DOCUMENTATION	■■■□□

8000 PLUS VALUE VERDICT ■■■■■

endgame of Draughts in play – guess who's winning?

Clock Chess v. the Rest

There are three Chess programs available for the PCW. CP's Clock Chess 88 (which supersedes their earlier 3-D Clock Chess), Cyrus II Chess and Colossus Chess 4.0.

We haven't had time to play many complete Chess games, but CP Software themselves have played 10 matches between each program, typing in the moves from one into the other. Clock Chess 88 beat its opponents, so they say, by the following scores:

OPPONENT	RESULT
3-D Clock Chess:*	8-2
Colossus Chess 4.0:	8-2
Cyrus II Chess:	7-3

*old version of Clock Chess 88

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move is based around the throw of a pair of dice, the winds of ill-fortune can be made the scapegoats for a defeat.

Backgammon, unlike chess or draughts, is a gambling game. There is a special cube called a 'doubling die' which is a die with the numbers 2, 4, 8, 16, 32 and 64. If at any stage you think you are going to win, you can offer your opponent a 'double'. If the double is accepted, the cube is turned to show double its old value, and the game carries on. Your opponent now has the right to double, and if the game swings to their advantage, they can offer you a double. In a close game, each player might double the other in turn several times.

At the end, when one of the players has all their counters off the board, the value on the doubling cube is the number of points won. (Some players multiply this by the number of counters left: if you cleared your counters while your opponent had 10 on the board still, and the doubling die showed 16, you would win 160 points.)

CP Software's Backgammon is a good implementation of the game. Unlike their chess and draughts, there's no attempt to give a 3-D perspective view of the playing board – it's a simple plan view, but still reasonably effective nonetheless.

On with the game

You always play white, and the pieces are always placed on the board in the configuration shown. (Some players prefer to arrange the pieces in the mirror-image of this pattern, with white playing from top left to bottom left, not top right to bottom right.)

When you start the game, you are asked to choose the playing speed. This isn't linked to any level-of-skill control, but merely inserts a delay before the computer reveals its move. The choices are Slow, Medium or Fast play – on Fast, the PCW moved instantly which can be a bit disconcerting. Slow and Medium give you a comforting human-like delay, and you can choose whether the PCW is to bleep as it moves to let you know it is your go.

The PCW rolls the dice for you. You've got to take its word that it hasn't cheated, which can be hard when it throws a very convenient double-six for itself! From then on it's all systems go: each of the 24 points on the board has a letter, so if you throw and 3 and a 1 you make your move by typing in `H3` and `F1` to move the counter on point H 3 along, and the counter on F 1 along.

The program understands the doubling rules, and isn't afraid to up the stakes when it thinks you're on the skids. Conversely, the program seems at times overcautious in its capturing policy. Several times it ignored relatively safe 'hits'. All the fun in backgammon is taking your opponent off and agonising over whether he'll get that 1-in-36 chance throw of the dice and take you back you. Since level of skill is a meaningless thing to set on a Backgammon program, it might have been nice to have a 'level of recklessness' setting instead. At the most reckless, the computer would hit you at every opportunity.

DRAUGHTS

£15.95 ● CP Software (0993 82 3463) ● All PCWs

Completing CP Software's trio of classic games releases is draughts, or chequers as the Americans call it. Since draughts is so much simpler than chess, computers can analyse a game in much greater depth. What this means is that computer Draughts programs are very good indeed, and certainly CP Software's draughts proved a merciless opponent.

When you first run the game you are asked to choose the difficulty level. On the pre-release review version this was done by two separate questions: How many moves ahead should the program search (0 to 9)? and, Should it do 'full capture search'?, which effectively doubles the number of moves the program checks. It would be rather less complicated to have one simple question, 'Degree of difficulty, 0 to 20?' or similar.

The playing board is shown in 3-D perspective, as with Clock Chess, but there's no clock or any options to limit the time on moves. The board squares are referred to by their co-ordinates, so you would enter a move by typing `A3B4`, for example, meaning 'move the piece in square A3 to B4'. Multiple hops can be entered by extending this, eg. `A3C5A7`.

The computer's play is very strong indeed – there's no chance of it failing to take advantage of your silly mistakes by overlooking them! If you enter an illegal move the PCW beeps at you. If you *can* take an opponent's piece(s) you must, and if you are in that position and enter a move which doesn't make the capture the PCW treats it as an illegal move and just beeps. This can be confusing as you sit there wondering why a legal move is being rejected – it would be nice if you were told, "You've got to move A3 to C5".

For serious draughts fans, this is an excellent challenge. All the rules are fully implemented, and the play is very strong. The instruction sheet with the game gives you a few hints on strategy, which squares are important etc., which even if you disagree with the hints this tells you what strategy the computer is using to decide its moves. EXIT

BACKGAMMON

PLUSES
- Uses the doubling die properly
- Safe but assured play
- Good graphics of the playing board

MINUSES
- Unadventurous in its capturing policy
- Can't choose colour/direction of play

RANGE OF FEATURES	■■■■■	STRENGTH OF PLAY	■■■■■
GRAPHICS	■■■■■	DOCUMENTATION	■■■■■

8000 PLUS VALUE VERDICT ■■■■■

How is it done?

If you are interested in the techniques used to program Chess, Draughts and other games, have a look at the book *Computer Gamesmanship* by David Levy (£7.95, Century. ISBN 0 7126 0015 5).

DRAUGHTS

PLUSES
- Capable of extremely strong play
- 3-D screen display is pleasant to use
- Documentation gives strategy hints

MINUSES
- No options like time-limited games
- Convoluted way of choosing degree of difficulty

RANGE OF FEATURES	■■■■■	STRENGTH OF PLAY	■■■■■
GRAPHICS	■■■■■	DOCUMENTATION	■■■■■

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Best of the rest

There are quite a few interesting PCW versions of traditional games. Among the programs offering to lighten your summer evenings are:

COLOSSUS BRIDGE 4.0 (£15.95, COS Software, tel. 0302 21134). A very good Bridge player combining a range of bidding convention options, good graphics and tutorial hands. Recommended.

BRIDGE PLAYER 2000 (£15.95, CP Software, tel. 0993 82 3463). A competent player, but not up to the standards of Colossus Bridge. Fine for the beginner (20 tutorial hands), but lacks flexibility for the expert.

SCRABBLE (£19.95, Virgin, tel 01-727 8070). A good version of the word game. It can play a very tight, strong game with some extremely obscure high-scoring words, but inevitably there are some vital words not in its 20,000 word dictionary. You can override any challenge it makes. Now out in a 9512-compatible version.

As yet, we don't know of any PCW versions of games like Monopoly, Go, or Othello, nor of card games like Poker. (There are some public domain versions of Othello, or Reversi as it is sometimes called, but these are a bit rudimentary).

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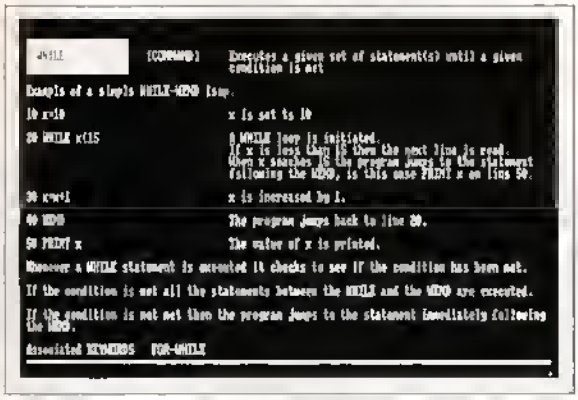
Anyone who has dabbled with Mallard BASIC will have come across the moment of truth when they just can't remember – what is the difference between SPACE$ and SPC, which number is which after MID$, or even, how do you switch on a switched-off cursor blob?? Maybe there is someone who can remember every command in Mallard but they certainly don't work for 8000 Plus.

Now, since the launch of the Jumbo disc you have two choices. 1) You can use the old method of spending 10 minutes looking for the BASIC manual, another five minutes finding the right command other 15 minutes discovering you're still not totally sure of the syntax and a final 20 minutes working out how it works by trial and error. By which time of course you have probably forgotten what you wanted to do in the first place. Or.

2) Use Jumbo and find out what the command does in minutes. Jumbo is simply a disc with nearly 200 files listing every command in BASIC including a few you haven't even heard of. The idea is that when you get stuck for the right command or syntax you just call up the directory (`type d`). This is in effect a list of file names.



If you want to find out what Fetchkey$ does you check the list and find that the file with the details on this command are kept in a file name FKEY (you just type in the capital letters from the name FetchKEY$ becomes FKEY). Then just write `type fkey` and the file appears.

It has all the Jetsam commands, a file listing all the escape codes for useful functions (everything from reversing the screen to defining a window) and a file with the full ASCII code and character set. There is also a page of keywords on various topics and a run-down on the bit-wise operators (AND, OR etc). The advantage is you can call these up without affecting your working on the program.

The idea is basically so simple you feel as if you could do it yourself. There is no program or anything too clever – it is simply the basic (or BASIC) facts simply laid out with an example where suitable (by far the best way to understand them). What you have to decide is whether you could do it as well and whether if you really need it it's worth £14.95 to save yourself the trouble. Could be a simple way to learn BASIC.

RANGE OF FEATURES	■■■■■	PERFORMANCE	■■■■■
EASE OF USE	■■■■■	DOCUMENTATION	■■■■■

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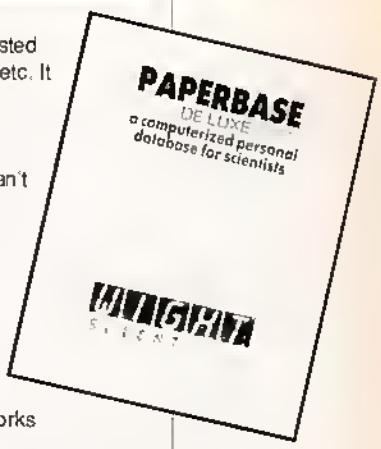
It's often said that your PCW is not just a word processor, but a very powerful general purpose micro computer as well. Writing essays, theses and dissertations is one of its main functions for many users, but the PCW can do a lot more for the academic than just handle the text. Organising bibliographies and keeping details of all those books and journals you've referred to is a time consuming task; Wight Scientific aimed this database specifically at this.

The advantage for academics (particularly scientists) is that it comes ready set up with formats for storing your bibliographies. You just enter the authors, title, journal reference if necessary, any number of associated keywords for sorting purposes later, abstracts if required, etc. and store them in a file. You can then sort them into order, for example by author.

The 'Search' option lets you select certain books – you'd probably do this by keywords, and Paperbase allows a selection of 'A and/or B but not C' – for a reading list or bibliography you could, for example, weed out all books and articles about Groucho Marx *or* Karl Marx, which are *not* about their films. Paperbase will then organise the data into a variety of standard formats it knows for various publications, or you can define your own.

Hunt saboteur

The 'Hunter' facility looks through a text file and compiles lists of references – all your 'Morecambe & Wise (1982)'s and 'Wilson, Kepple and Betty [67]'s will be listed in order of first appearance, order of authors etc. It can be fooled, though, and you might find 'However, Morecambe & Wise' and similar appearing in your lists.



The downside of Paperbase is that you can't print these lists out directly – you'll have to insert them in a LocoScript document, then print that. Also you'll have to make an ASCII file of your LocoScripted thesis before you can hunt for those citations. It occasionally puts in spurious blank lines at random, an irritating legacy of its conversion from IBM format. There's no manual, but there are plenty of help files on disc, which probably works out better anyway.

Paperbase's main advantage is also its drawback – that it comes ready set up for scientists. It's not quite so suitable for artists (and doesn't claim to be, of course). If you want a general purpose database, you can get excellent packages for less (Masterfile, AtLast – yes, even Mini Office) which will do all the above and much more; but they need setting up. Paperbase has aimed itself at a particular purpose, and it handling academic bibliographies is *exactly* what you want from a database, it'd be well worth the money.

RANGE OF FEATURES	■■■■■	PERFORMANCE	■■■■■
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THE JOY OF SPREADSHEETS

Looking for an accounts package? With a spreadsheet you can design your own. Alec Rae, who has had a lot to account for, shows you how...

One thing most PCW owners are interested in is some sort of accounts package. Whether you are using your computer to run a business or just to keep track of your personal financial affairs it seems ideal for handling a lot of information. And the prospect of being able to find whether you've made a payment in minutes, rather than hours of scrambling through piles of papers, seems too good to be true.

The problem is finding a package that suits your needs. Some packages are so simple you'll be using them in minutes without worries. The problem is that after having used it for a couple of weeks you will have already found its limitations. It might not do something you particularly want it to do – VAT for example.

At the other end of the scale there are packages that do everything you want plus several thousand things you don't. These are usually recognisable by manuals like a fleshed-out version of War and Peace. In some cases they read like a version of War and Peace that hasn't been translated properly.

Either way the unwary buyer can come unstuck. So what's the answer? It may seem unlikely but you may be best to write your own system. This can be done quite successfully with what must be the most misunderstood piece of computer software – the spreadsheet.

Under the spreadsheets

The joy of the spreadsheet is that you have control over what happens. The new owner can start with the simplest system possible and then build it up, adding features as the need arises. There is no worry about understanding how your accounts system works – you have written it yourself. No worries about incomprehensible manuals either. There are spreadsheets that allow you to even have simple databases and draw sophisticated graphs all in the one program.

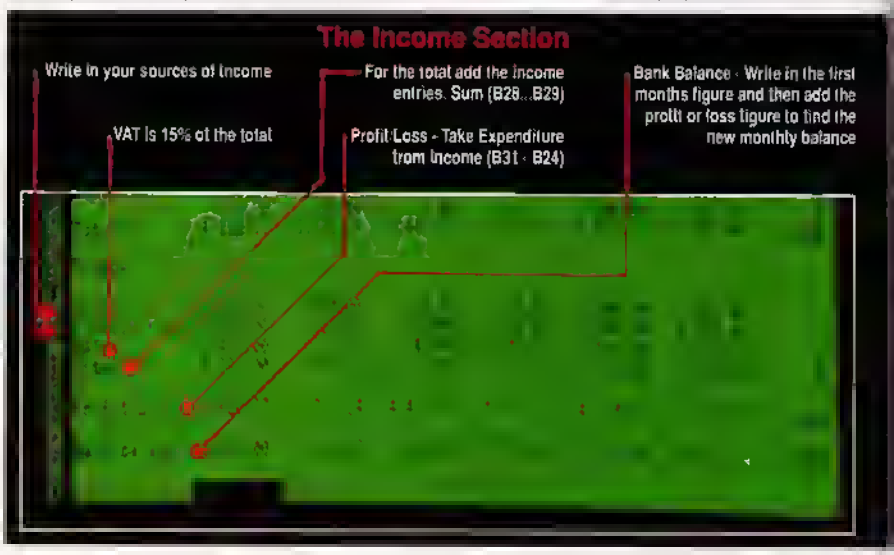
Over the next couple of months we will be looking at the most obvious spreadsheet applications giving you a simple idea of how they can be set up and how they work. Once you have used them for a couple of weeks you will see where improvements need to be made and where changes can bring them more into line with your own requirements.

Number 1 – The Cash Flow Projections

The essence of good management is to give the impression of planning ahead. This is particularly important for impressing bank managers and anyone who is liable to lend you money. And there is nothing more likely to impress than the production of cash flow projections. This is the most perhaps obvious application for a spreadsheet and the one reason why most businesses would consider it a good investment.

Perhaps spreadsheets are not as popular as they should be because there is no simple way of explaining what they do. The most obvious way to describe them is that they provide a computer version of a large sheet of paper that you can use to write anything you want on. This is usually long columns of complicated figures. The program will take any of these figures, add them, subtract them or take a percentage or an average. Most will also do the most obscure calculations that you would need a mathematical bent for to get really excited about.

Where you really see its worth is when you have built up a complicated lay-out to discover that you have got one figure wrong. If you change this figure it would mean changing every other calculation on the page. But with a spreadsheet it automatically recalculates all the figures that are affected. Suddenly 'What-if' type calculations become fun, rather than a nightmare – a godsend when getting your cash-flow predictions right for the bank manager.



Wide open spaces

These can be built up into very complicated work-tools. You are not limited by the size of the screen – most programs allow you to scroll about in almost infinitely large spreadsheets. If you want to compare figures from different parts of a large sheet you can often use 'windows', a method of splitting the screen into two different areas.

The only problem with this might come when you want to print out this vast screen – it could well be too big for the paper. However, most programs will allow you to print out specific sections which you can piece together.

A year's cash flow is therefore the ideal example. This is when you estimate how much your expenditure will be month by month and how much income you can reasonably expect.

The form they take is usually 12 monthly columns (with the name of the month at the top of each). Down the left

Bluffers note

While databases and word processors have arguably been around for decades, spreadsheets are a recent invention even in computing timescales. The first was VisiCalc about 10 years ago.

hand side you have the headings for the types of expenditure you expect – rates, rent, wages, purchase of diamante encrusted spectacle frames etc. This can be as long a list as you feel willing to think up categories to break up your spending.

Below this you can put a list of all the income categories you can think of. This would normally be quite short but it is worthwhile trying to divide income up into as many meaningful sections as possible. It somehow gives the bank manager more confidence that you have haven't just invented these figures. If you have actual figures for last year's sales you might want to just use these with a reasonable percentage rise to reflect your optimism for next year's growth.

"Tell me the worst..."

Then all you need is a column to signify how much you have (or how much you don't have) in the bank. The program adds up all the expenditure and income figures for January and takes one from the other. This can then be added to (or subtracted from) the amount in the bank to tell you how much you think you will have in the bank at the end of January. The spreadsheet should then carry this figure forward to February where the same process is carried out.

This allows you see how far your bank balance will slide into overdraft at the worst point in the year but you can persuade people it is useful for other things.

It can also give you a total for income and expenditure figures separately and take any averages or percentages you can think of (averages and percentages always impress even if they don't mean anything).

In practice

The new version of the Cracker spreadsheet, Cracker Turbo, is ideal for this kind of job. As it's a fairly typical spreadsheet, the general procedure described here will be the same on others (SuperCalc2, Mini Office etc.) though the commands will be different.

After loading the program your first job is to create 12 columns – one for each month. Every letter of the alphabet has a function so you just type in the correct letter and Cracker prompts you through the options till you get it right. So first type `A`. This will switch automatic calculation off. If this is on, the computer tries to recalculate any changes each time you change a number or a formula – a lengthy exercise.

Then type `I`; it acknowledges you want to insert something and asks what it is you want. In this case it is 12 columns so you write `12C` and it will ask you what width you want them. Unless you are working in large sums of money something between 10 and 12 should suffice.

Press RETURN and you're prompted for the format. This means basically whether you want to put text or numbers into these columns. As we are going to be dealing with money, type in `0£` which means Financial Format set to no decimal places. Press RETURN twice and the columns will be shown disappearing into the wide green yonder off the right hand side of the screen.

It is still only one line deep so you now insert the number of lines you need. Do it with the command `I24L` (in English 'Insert 24 lines'). Don't worry too much at this point how many lines you really need. If you need more just move your cursor to the part of the screen where you want them and use the `I` command to insert some more. Twenty-four is just a handy screenful.

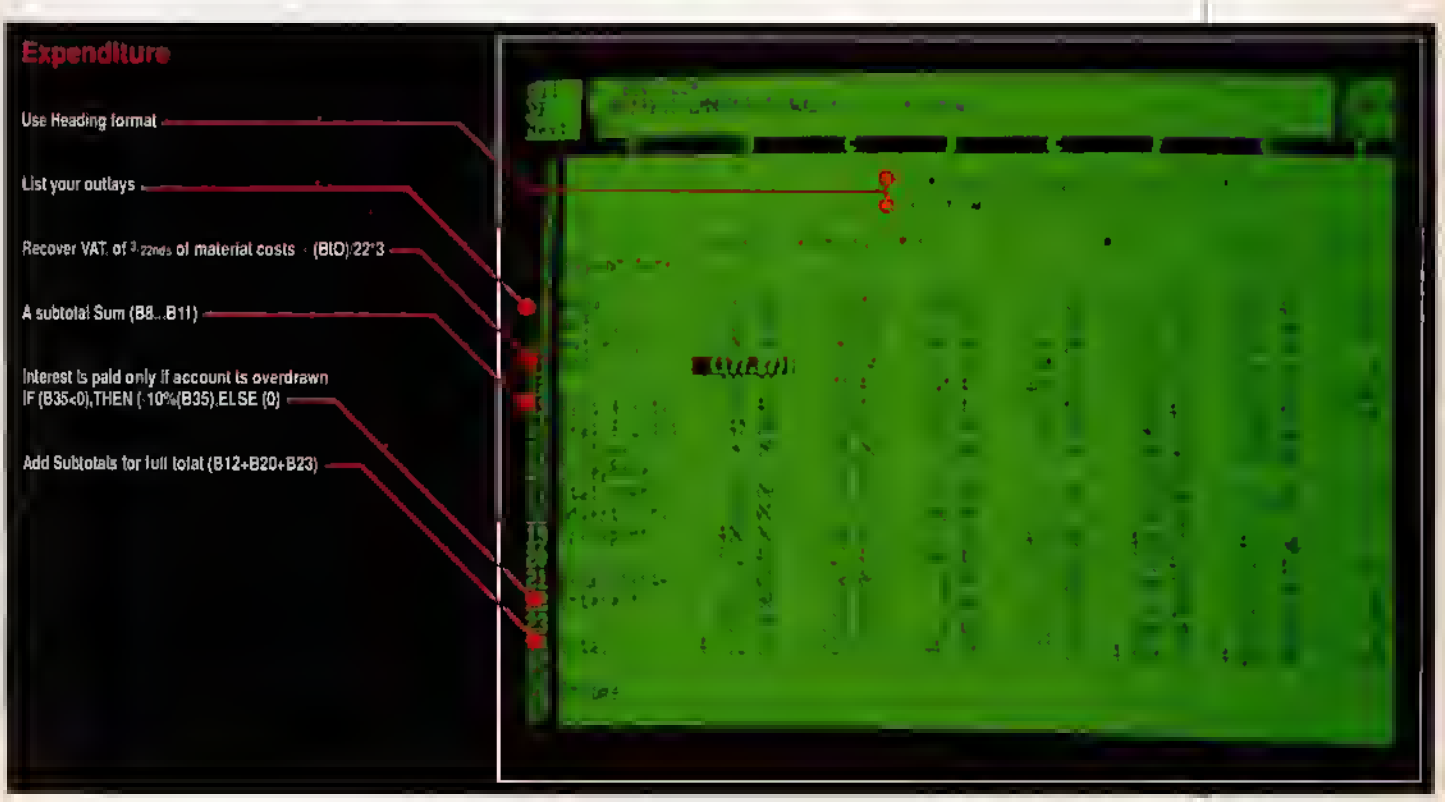
The boxes you can see divided up by the dotted lines are called cells and each has an individual number. The one in the top left corner is A1. Remember that here Cracker is looking for a capital letter and it will get upset if you write `a1`. Into these cells you can insert text, a number or a formula.

Move to the cell at the top of the first monthly column. Normally to put information in a cell you type , but here you type '. This in effect changes the format to allow it to accept text. Then write `January` and on pressing RETURN the word appears in the correct cell. Work your way across the screen adding the months.

Go to A1 and use the command `IC` (insert one column) and width 12. When you asked for the format this time enter `T` for text, and `L` for left justified. This is where you put your headings (Rent and Rates, Wages etc) by typing , and the

Bluffers note 2

The "industry standard" spreadsheet has been Lotus 1-2-3. SuperCalc 2 and Cracker are similar in operation and format.



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text. List your expenditure items one after another (leave spaces where you want sub-totals taken) and then list your income headings.

If you are not pleased with the first format don't despair. You can (M)ove entries, (I)nsert more lines and (Z)ap (in English, delete) any unwanted lines or entries until you get it right.

Then turn your attention to the formula you need. If you have three for four headings that you want to sub-total, running from cell B5 to B9 say, move to cell B10 and write `.SUM(B5...B9)`. This adds all the figures in these cells and puts the total in cell B10. To get the grand total of your expenditure all you need do it write a formula in a suitable cell listing all the locations of these sub-totals (eg `.SUM(B10,B16,B23)`)

VAT's the way to do it

If you work with VAT you may want this taken from the cost of your materials or sales. Say your material costs are in B25. In the next cell entitled VAT just write `(-15%(B25))`, ie. 'put a minus figure of 15 per cent of materials costs'. When added in with the expenditure if will reduce the total by that amount.

At the bottom of the page you will want a grand profit or loss total for the month. This is gained simply by subtracting the Expenditure figure from the Sales figure (for example `(B32-B24)`) If you are making a loss the figure will show up in brackets.

The final stage is working out your bank balance. Taking your existing bank balance you just add the Profit (the loss will be a minus figure so you will get the correct result). You will want this figure printed out in the next column where it will be used as the current bank balance figure. So in C40 you would write something like `(SUM B40,B38)`.

These formulae apply fo every month but it would soon get boring if you had to type each one in 12 times. So you use the copy command. Type `C` for copy and `E` for entry. When it asks for a figure type `11` for 11 times. It will ask whether or not to change the references to which you reply `Y`. This changes fhe cell reterences to suit the column that it's in. When it asks 'Where', move one cell to the right and press RETURN. All the cells across the page will be filled with the correct formula.

At this point you should save the version of the spreadsheet using `CAF` (Copy All to File) and pick a filename like `TEMPLATE`. Then whenever you want to start a new cash tlow chart you just load this template.

Now start filling in the values (. and the value). There are some which will be the same throughout the year. For instance monthly rates and rent will be the same amount each time. Just use the copy function again. Fill the amount in under January and (C)opy it 11 times across the page.

Fill in all the cells that need to be filled and press `A` again to turn the automatic calculation back on. After a moment's thought the program will work out all the formulae and fill in the gaps.

The beauty of the spreadsheet is that you can constantly improve and modify it to suit your needs. It Is the work of a moment to add in a heading that you have forgotten and as you become more confident you can start to use the program's more advanced features.

However the real fun comes when you want to work out a few 'what-if' scenarios. You could have one tor your sales beyond your wildest dreams (to see whether you could afford the holiday in Thailand) or the worst possible to see how long you would last without the liquidators stepping in.

It's a Cracker

Cracker Turbo is an upgraded version of the already sophisticated Cracker 2, a program well known to many PCW users.

Any Cracker 2 user who wanted to upgrade will feel quite at home in the Turbo version. Apart from a few extra dotted lines on the screen there is little difference in the way the package works. The big difference Is speed. Although not a slow package there were some ot the more complicated tasks in Cracker 2 (especially in the graph drawing section) that did take a fair amount ot time. You therefore only get the real advantage of Cracker Turbo if you are using it for larger, more complicated applications.

Although not difficult for the beginner, Cracker's real appeal is to someone who wants to stretch the limits of the package. Its mathematical functions are extensive and there is what amounts to a programming language with macros (assigning a serles of commands such as format changes to a single key) and sub-routines (using conditions like BASIC's IF or WHILE commands.) There are also some clever commands to set the value ot a cell which can be used to set up tables.

Something unlikely

You can use Cracker tor some unlikely tasks. Most notable is the graph drawing tacility which allows you to use information from a spreadsheet to draw 18 different kinds of graph including ple and bar charts.

The program can also be used as a basic form of database. By listing In names and addresses for instance you have a command to sort them and a FIND facility that allows you to pick up the correct address at a moments notice.

The ability to copy formulae into any number of cells (with the references adjusted or not as required) makes building up large applications considerably quicker as even with the Turbo version the screen update (when you move off the part of the spreadsheet shown on screen) is still quite slow. It is worth learning the 'Jump to' commands which allow you to move about more speedily.

If there's anything to put you off Cracker Turbo it must be the manual which is not the most lucid of documents and not the most logically laid out, though a new manual is promised and eagerly awaited. But it's a good spreadsheet that should do whatever you want if you have the time and enthusiasm to get into it. Existing users with large complicated applications will find the upgrade worthwhile. EXIT

Getting really clever

Cracker can do sophisticated calculations using conditional statements. Say you want to work out what interest payments you will pay while you are overdrawn. If your bank balance is recorded in, for instance, C35 go to the point where you want the interest to be recorded and write `.IF(C35<0),THEN(-10%(B35)),ELSE (0)` which means if your bank balance is less then nothing (ie. you are overdrawn) work out 10 per cent of that figure and write it in this box (as it is already a minus figure the – makes it a positive figure which will be added to the expenditure). Otherwise put in nothing. With this kind of formula you can do any number of complicated tasks.

The Rest

The other leading spreadsheets available for the PCW are:
SuperCalc 2 (£49.95, from Amsoft on 091 567 3395)
Mini Office (£29.95, Database, 0625 878888)
First Calc (£29.95, Minerva, 0392 37756)
Pocket CalcStar (Davis Rubin, 0386 841181)

CRACKER TURBO
£49.95 ■ Newstar Software (0277 220573) ■ All PCWs

PLUSES
- Increased speed
- Wide range of features

MINUSES
- Unhelpful manual

RANGE OF FEATURES	■■■■■	EASE OF USE	■■■■■
DOCUMENTATION	■■■■■	PERFORMANCE	■■■■■

8000 PLUS VALUE VERDICT ■■■■■

THE LEARNER FRIENDLY SERIES

1 FIRST BASE (PCW and PC versions) £29.95

A simple to use introductory database. Design your own record card on screen in minutes with up to 250 items of information. Storage is disc based so it is not limited by the memory. A Help Panel is included for new users. Records are kept in constant sorted order and are instantly accessible by name or number. Manual or automatic search options and facility to re-sort the file. Mailmerges with locoscript and outputs ASCII files. Reports and totals. Example uses are mail lists, stock inventories, booklists, client information and much more.

2 LERNLOCO (PCW) £16.95

A step by step tutorial to gain a full understanding of the LocoScript wordprocessor. Many exercises are included to give experience and confidence. Users soon gain confidence and even create their own personalised manual!

3 TYPERITE (PCW) £17.95

A comprehensive yet easy to learn touch typing course based on the famous Pitmans method. It has been designed to teach the correct method for the skill of fast, efficient typing. The emphasis is heavily placed on rhythm and accuracy rather than testing by speed at an early stage.

4 FIRST CALC (PCW, CPC6128 and PC versions) £29.95

A simple to use spreadsheet yet contains many facilities available on much larger systems. Full maths capabilities including average, count, max., min. and total. Calculate in both horizontal and vertical directions to an accuracy of 14 significant figures. Portions of a sheet may be copied, printed, saved or loaded with either automatic relative or absolute reference adjustment. Useful for fast and effective cashflows, home budgeting, statistics and even stocks and shares.

Other Software for the Amstrad CPC 464/664/6218

Random Access Database £29.95

Powerful, versatile, random access database. Finds records in seconds not several minutes. Multiple print formats, mix 80 & 40 character text or boxes in design. Extensive calculations including SIN, LOG, COS, etc. Comprehensive search and sort facilities. 40 fields per record

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A full range of utilities including random access, sector editing, error handling, etc. Simple RSX commands interface directly with the resident BASIC. A powerful EXEC command allows a BASIC statement to be executed from within a program to evaluate calculations

"This is not just a beginner's program it contains enough sophisticated features to suit the needs of most people". 8000+ July 87.

"First Calc performs admirably, the price is unbeatable and it is simple to use." Amstrad Action. Sept. '87.

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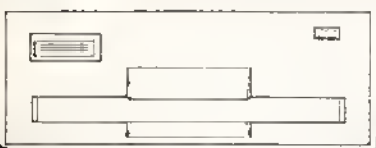
MINERVA

The UPGRADES



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The UPGRADES

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Do you want to hand bend 128 I.C. legs, or would you prefer our jig bent chips?
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Do you want the best instrucions around?

PCW 8256 Internal Memory Upgrade to 512K

The specialist PCW magazine '8000Plus' selected our Upgrade as 'BEST VALUE' "Silicon City instructions are clear and concise...easier than you think"

Our simple instructions assume no prior knowledge, experience, or skills. We supply tested, TOP QUALITY, fast (150nS) chips which are jig performed for ease of insertion - NO BENDING REQUIRED - plus a 'practice' chip.

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VISA

COMPETITION

GRAB YOUR GRAPHICS

We're giving away ten copies of MasterPaint and five packs of MasterScan plus MasterPaint. Win our competition and unleash the graphics power of your PCW!

Despite being a word processor, your PCW can be a powerful graphics machine too. MasterPaint and MasterScan are two good value packages which can help you use that graphics potential. MasterScan is an ingenious device which fits onto your printer head: it scans whatever is on the piece of paper in the printer and sends the result to your PCW, saving it to a file on disc. You can then use the graphic in your desktop publishing programs and put it in newsletters, posters and so on.

MasterPaint is a powerful package which lets you create and manipulate graphics in a number of ways. By itself it's a great graphics utility, and if used in conjunction with MasterScan, for example, you can edit scanned pictures before using them into your desktop publisher – that photo of yourself could have all the wrinkles and warts removed painlessly. If you've got a 9512, then you'll need a dot matrix printer to get any graphics on paper, of course.

In conjunction with Database Software, manufacturers of both packages, 8000 Plus is offering graphics software to the fifteen winners of our competition.

Spot the difference

The two pictures on this page were scanned using MasterScan from the original photograph, stored as a graphic in MasterPaint, and printed out on an 8512 printer. One is the original, but before printing the other out, we couldn't resist using the editing features of MasterPaint to change a few details. There are four differences between the two, and all you have to do is use your skill and judgement to find them and write down what they are. If, for example, you think that the man on the left is wearing a pantomime horse costume in one picture and not in the other, you would write 'man on left – horse costume', and so on.

When you think you've spotted all four differences, send your entry on a postcard or on the back of a sealed envelope to *Graphics Competition, 8000 Plus, 4 Queen St, Bath BA1 1EJ.* The first ten correct entries drawn out of the editorial sack on Friday 3rd June each win a MasterPack (a MasterScan plus a MasterPaint); the next five receive a copy of MasterPaint. The winners will be announced in the July issue.

Usual rules: 1) No correspondence will be entered into 2) All multiple entries will be spotted and disqualified, and 3) There is no rule 3.

ORGANS OF ORGANISATION

Alec Rae looks at two new ways to computerise your personal organiser.

It had to happen. What with PCW owners being high-flying self-starters they were obviously prime candidates for recruitment to the world of yuppiedom. Now two programs have been launched which let your PCW help your personal organisation.

Kempston have come out with Daatafax, a program which you use in conjunction with your personal organiser ring-binder, a quick and easy way of keeping track of appointments, names and addresses and notes. Meanwhile HPA, the company specialising in finding ingenious ways of using LocoMail have come up with Orgmentor – a suite of programs to create a diary, name and address file, a task manager and a money manager. It even allows you to create forms that suit your needs and fit your ring binder.

Of course you have to be reasonably organised to think of using either program. But then again you have to be a pretty organised person to want a Filofax (or compatible) in the first place and with the number of them that have been sold over the last couple of years it would seem that something like 95 per cent of the British public is really organised.

And it is only one step beyond writing all the facts of your life in a ring-binder to writing all the same facts in a computer program and then printing them out on paper that will fit the binder. And of course should you lose your 'organiser' instead of having a nervous breakdown (standard reaction for a de-filofaxed yuppie) you just buy another binder and print out the information again.

DAATAFAX

Basic version £39.95, with Microfile £49.95, Basic version with mouse £79.95

● Kempston Data (0908 690018) ● All PCWs

Kempston have made a serious attempt with Daatafax to tackle the serious flaw with most PCW desktop organisers – that you can't take it wherever you go. The problem is that no matter how organised you have your information on disc, you always need it most when you're twenty miles from the nearest disc drive.

Taking the lead from the organiser boom Kempston have devised a simple way of helping you prepare and print out data in a form that will fit the average ringbound Filofax clone.

Kempston have gone all out to make it simple to use (whether this is any comment on the average yuppie isn't stated). Certainly you will not be ploughing through a manual for hours to get this program going – you just load up and get started. As the program is aimed at people who lead busy, high-powered lives this would seem sensible.

Being well known for their mice Kempston have produced a version to run with a mouse although the standard version will work just as well on keyboard only. The program even checks whether there is a mouse fitted and automatically sets up for it.

Looks good...feels good

The program looks and feels good to use. The mouse version especially feels very steady and is fast and efficient in operation. As with most of these programs where you are entering a large amount of text you might yearn for the comfort of your own favourite word-processor although the text editing features with Daatafax are quite extensive and well designed.

One or two features may take a little getting used to. However it does have word-wrap (including the ability to reformat after corrections) and you can insert lines and characters as required. There is also a handy cut and paste facility, and you can remove or alter entries when details change.

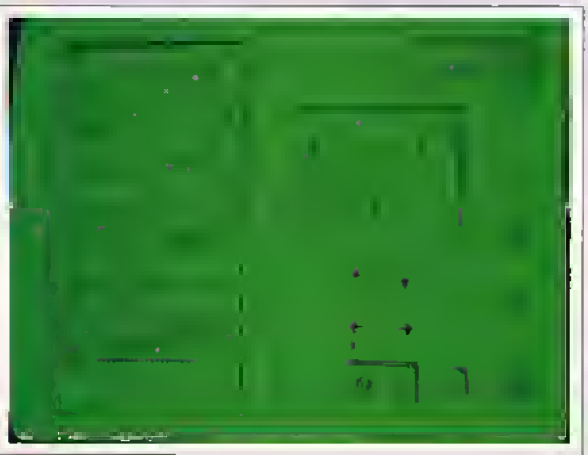
Probably the editing feature with the most potential will

Onward and upward

Daatafax can be bought with a pale grey Microfile complete with internal dividers for an extra £10 although there are plans for bigger and better ring binders. In fact there are plans for a number of improvements and modifications to the program so real yuppies must watch the pages of 8000 Plus to be sure they have the most up-to-date version.

In case you miss the look of a real personal organiser here is one on screen for you ▶

The program generates pages for your diary and also allows you to mark in the exciting events of your life. ▶



be the ability to set tabs anywhere on the page. This allows you to easily set up tables (such as train time-tables or work schedules) and lists of all descriptions – a facility that the really organised person will grasp with fervour. Should you still yearn for working in LocoScript however there is a program to convert Loco files to fit the new format.

You have the choice of printing in normal text or condensed (for those people who have a lot to write in their diaries). You then print out all the details on the special quality ring-binder compatible micro-perforated continuous paper (50 sheets are provided with the package). This is not the cheapest of commodities (£8.95 for 250 extra sheets) but Kempston have decided it is worthwhile going for quality. Plans are underway to provide paper in pastel shades for the aesthetically conscious.

Keeping track

Obviously the two main functions for a personal organiser are to hold a diary and a list of names, addresses and telephone numbers – functions that Daatafax tackles with relish.

The name and address files have obvious practical advantages over the normal hand-written organiser. You can always read your writing and you have a permanent back up record on disc.

The diary is perhaps a less obvious application for the PCW. By the very nature of things you are inclined to make appointments when you are out so you tend to scribble in the details as you go along. The main advantage with Daatafax is that you can constantly generate pages for your diary at will. You can print out any page – a lot cheaper than buying a new year planner from the stationers. It's also printed out with the correct day and date. The program contains a calendar which can be printed out in the correct form and allows you to do things like check what day you were born on (assuming you weren't born before the Gregorian calendar was introduced).

How useful the last section (the notepad) is to you depends on your own imagination. You can fill pages of useful details set out neatly as well as recreating all the fancy inserts that have been created for real Filofaxes. These can easily be edited and reprinted if any details change.

If you have the initial time and enthusiasm to set it up properly it could be invaluable. Journalists will probably stick to scribbling things on the back of envelopes.

ORGMENTOR

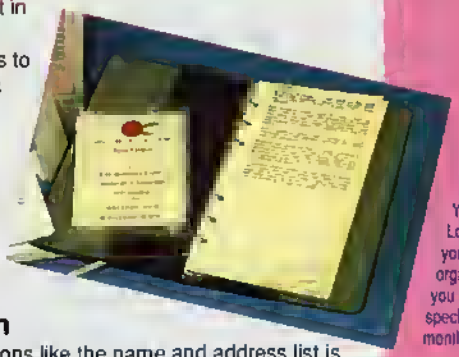
£19.95 (£29.95 with binder) ● HPA Systems (08697 508) ● All PCWs

In many ways Orgmentor is a more ambitious program than Daatafax. Like all the HPA offerings it is based on making the best use of LocoMail, the LocoScript mail merger. LocoMail is really a quite sophisticated program complete with its own programming language which few users seem to take full advantage of. What HPA offer anyone who has the program is the expertise to make the best use of it.

This is one of the company's most ambitious attempts so far. The Orgmentor will produce a diary, a name and address file, a form generator, a task manager and a method of keeping track of finances all using LocoMail programs.

While it comes with a rather basic ring binder and no continuous paper it does make a real attempt to organise the way you organise your life. The programs are usually run by merging a program with the latest datafile (from which it takes the up-to-date information). The programs actually prompt you for the data, sort it out and present it in a suitable format.

The diary is definitely more flexible than Daatafax allowing you to print out in either one, seven or 21 accurately dated entries to a page although it does take a bit of time to produce. Once generated these diary pages can be saved on a file and written in as normal.



Miser note

You can just use LocoScript to print out your data on personal organiser inserts for free – you don't even need any special paper. See this month's TipOffs

Trying too much

One problem with sections like the name and address list is that because the company have tried to get it to do so much it has made it rather complicated. You use one program to add names, another to change it and another to sort it out. It is perhaps an untidy and time consuming way of tackling things.

The form generating section is a simple if clever idea. How often would you like a form that suits your requirements with all the suitable sections for filling out. This section leads you through the process of producing simple forms and then creates the lay-out allowing you to add text as required.

Perhaps the yuppiest program is the Task Manager, again a simple idea to get you to define your objectives and put timings and priorities on them. The program asks the questions and you fill in the answers – 'What is the target date?' or 'What is the priority?'. You run another program to have these listed out in a suitable order. This does little more than you could do by sitting down with a blank screen and an orderly frame of mind but perhaps just the fact of owning a Task Manager would force you to do something.

The final (and most ambitious) section covers money. It allows you to keep track of 10 accounts and apportion your spending over 10 different expenditure areas (which you define). You then type in your incomings and outgoings with the suitable account and expenditure numbers. Depending on what program you run the information is displayed in a variety of formats, from 'everything at once' to the details of just a specific account.

It's an ambitious if not totally successful package. It isn't worth buying LocoMail for it but if you already have the mail merge it might be what you need. EXIT

Not aa misprint

Daatafax was to be called Datafax, but the extra a was added so as not to be confused with a company called Datafax (which makes personal organisers), presumably on the advice of their lawyers.

DAATAFAX

PLUSES
- Easy to use
- Flexible to allow you to do what you want
- Generates diary pages – saves buying inserts
- Good for names and address organisation

MINUSES
- Time consuming preparing data
- Keeping everything up to date is tedious
- No sophisticated facilities

RANGE OF FEATURES	■■■■■	PERFORMANCE	■■■■■
EASE OF USE	■■■■■	DOCUMENTATION	■■■■■

8000 PLUS VALUE VERDICT ■■■■■

ORGMENTOR

PLUSES
- Works in the familiar ground of LocoMail
- Task Manager forces you to think in an organised way
- Basic accounting facilities
- Flexible diary format

MINUSES
- A little complicated to work
- Needs LocoMail to use it
- No continuous paper with the package

RANGE OF FEATURES	■■■■■	PERFORMANCE	■■■■■
EASE OF USE	■■■■■	DOCUMENTATION	■■■■■

8000 PLUS VALUE VERDICT ■■■■■

MASTERFILE 8000

FOR ALL AMSTRAD PCW COMPUTERS

MASTERFILE 8000, the subject of so many enquiries, is now available.

MASTERFILE 8000 is a totally new database product. While drawing on the best features of the CPC versions, it has been designed specifically for the PCW range. The resulting combination of control and power is a delight to use.

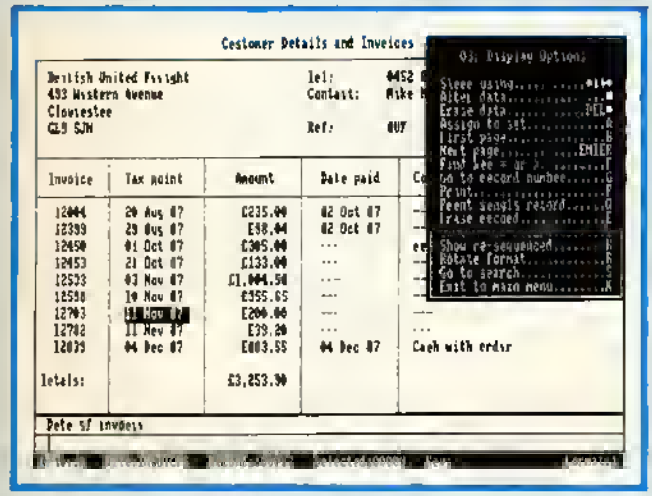
Other products offer a choice between fast but limited-capacity RAM files, and large-capacity but cumbersome fixed-length, direct-access disc files. MASTERFILE 8000 and the PCW RAM disc combine to offer high capacity with fast access to variable-length data. File capacity is limited only by the size of your RAM disc.

A MASTERFILE hallmark is the provision of multiple, user-designed display formats. This flexibility remains, but now it's even easier. With MASTERFILE 8000 you design your formats "live"; no more questionnaires, just move your format effects around the screen using the cursor keys!

Record updating is even easier than before — just steer your cursor to any field on the screen and then insert/erase/alter as required.

Special options are provided for handling dates and surnames, and column totals can be generated.

All screen work is done graphically — and hence we offer unique panel, box, and ruled line options. Choose the line spacing at pixel resolution — you will be amazed how much clearer 9-pixel lines are than the usual 8-pixels. (Study the picture.) And all this faster than CP/M normally lets you paint the screen! PCW printer functions, under menu control, are provided.

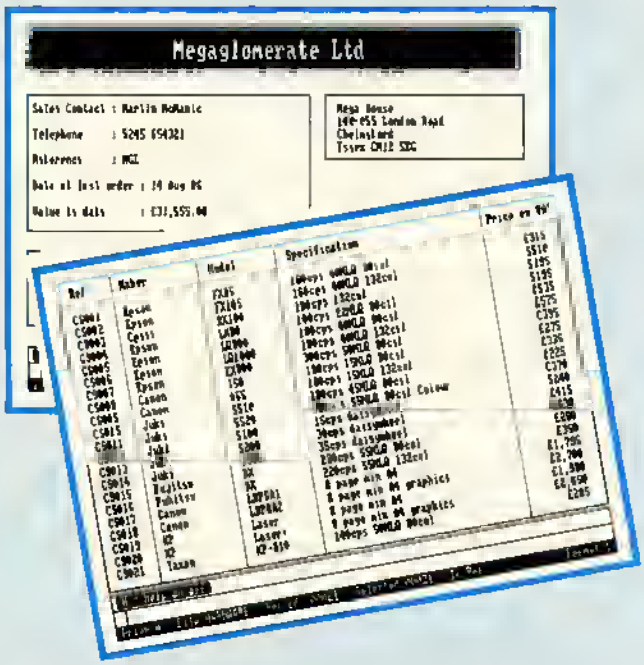


Keyed files are maintained automatically in key sequence, with never any need to sort. You can have unkeyed files too, where records can be inserted at any point in the file.

Any file can make RELATIONAL references to up to EIGHT read-only keyed files, the linkage being effected purely by the use of matching file and data names.

You can import/merge ASCII files (e.g. from MASTERFILE III), or export any data (e.g. to a word-processor), and merge files. For keyed files this is a true merge, not just an append operation. By virtue of export and re-import you can make a copy of a file in another key sequence. New data fields can be added at any time.

File searches combine flexibility with speed. (MASTERFILE 8000 usually waits for you, not the other way around.) You can even assign subsets of a file into one or more of seven pigeon-holes for subsequent reference or further manipulation.



FIELD-TO-FIELD CALCULATION is available, using any mixture of terms and arithmetic operators + — * / ( ).

MASTERFILE 8000 is totally menu-driven, fully machine-coded, and comes with example files and a detailed manual. We claim (modestly) that you will not find another filing system with such power, flexibility, and friendliness.

MASTERFILE 8000 costs £49.95 including VAT and P&P to anywhere in Europe. Elsewhere please add 20% for air-mail service. ACCESS/VISA/MASTERCARD orders are welcome, written or telephoned, quoting card expiry date. Make cheques payable to "Campbell Systems".

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7 Station Road, EPPING, Essex CM16 4HA,
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THE SOFT TOUCH

In the 1960s, the importance of having the right software and of being IBM-compatible showed through.

Between the late '50s and the present day, the history of commercial computers is a long list of different models with bigger memories, faster processors and better software.

Silicon replaced Germanium as the favoured material for building transistors, and in turn transistors were superseded by integrated circuits. By the mid-60s computers were well established as essential business tools, and the race to build smaller, faster and higher capacity machines was on. The most important computer of the decade, and possibly the most important to date, was undoubtedly the IBM model 360.

The 360 was announced in April 1964, and deliveries began at the end of 1965 (18 month delays are nothing new in computing). It was designed by two separate teams; Gene Amdahl designed the hardware, and Fred P. Brooks was in charge of the software. The hardware project went very well, and the basic 360 design was used in many later models by IBM and its rivals. However, the software (the operating system) had to be knocked together in a great hurry as the 360's launch was unexpectedly brought forward to pre-empt rival computers being developed by Honeywell and CDC.

Fred Brooks subsequently wrote a book called 'The Mythical Man Year' inspired by his time on the 360 software project. In essence, he had produced a software development plan for the 360 taking, say, 50 man years of effort over a year. IBM then gave him 200 staff and said, "Do it in three months. That's the same number of man years, isn't it?" And it didn't really work too well.

Despite its faults, the IBM 360 was the best machine of its day. It was a first in cost-effective power, and all the major companies bought one. Of course once their records were all held on IBM format discs and used with IBM programs, that was that. IBM have really had the corporate market sewn up ever since, as the effort required to change is just too much for most companies.

Amdahl and Brooks left IBM soon after the 360 was finished, and made careers for themselves plaguing IBM by telling everyone about the flaws in the 360 system. Gene Amdahl has since started up a highly successful rival company producing high performance IBM-compatible computers to undercut his old employers.

In many people's view IBM have exploited their virtual monopoly ever since by imposing very high prices coupled with aggressive sales tactics to squeeze out potential rivals. Between 1974 and 1982 the US Government sued IBM under their 'anti-trust' laws (similar to our Monopolies Commission inquiries but more formal), eventually settling out of court. The Justice Department's man, Richard DeLamarter, was convinced that IBM nobbled the case

IBM's little joke

Before they launched the model 360, IBM had been selling two older machines: one was purely a data processing machine, the other a scientific calculating machine. The 360 was supposed to combine these and hence solve problems 'all round the compass' – 360 degrees. This is what passes for humour in IBM.

Two for the price of one

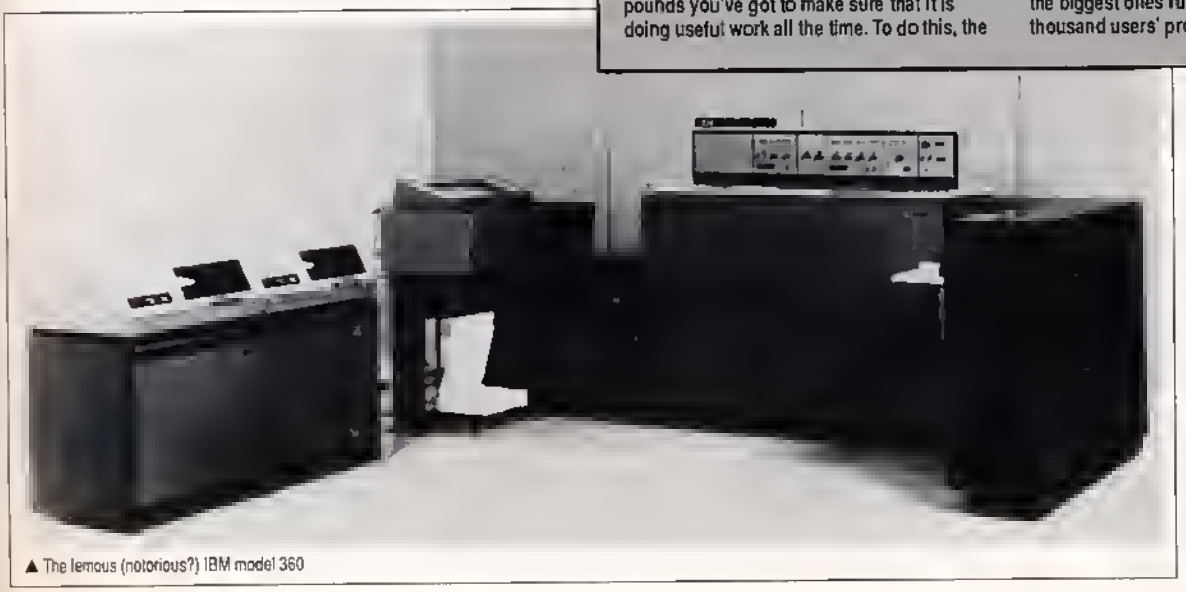
When your PCW is going, only one person can use it at a time. This may seem an obvious thing to say, since fitting two people around the keyboard would be a bit of a squeeze. At first, all computers worked this way: they could only run one program at a time.

Think about the way you use your PCW when you are word processing. Most of the time you are pondering what to type next, and when you are typing you are perhaps inputting 200 keystrokes a minute. The PCW can do hundreds of thousands of operations a second, so you are actually wasting 99% of its computing power. Most of the time it is waiting for you to press a key.

This doesn't really matter, but when you are talking of a computer costing millions of pounds you've got to make sure that it is doing useful work all the time. To do this, the idea of 'Multi-tasking' was invented. What happens is that whenever the computer finds it is waiting for some input, or to write a file to disc, it stops running that program and starts running another one. Some time later, the inputs for the first program will be ready, and so the second program is suspended and the first one carries on where it left off.

With this interleaving system, even though programs are being swapped many times a second, the computer can run millions of instructions in the time it would normally be waiting idle for users and discs to respond.

One of the first computers to use multi-tasking was the English Electric LEO (late '50s). Nowadays almost all computers costing over a few thousand pounds can multi-task, the biggest ones running perhaps several thousand users' programs at the same time.



▲ The famous (notorious?) IBM model 360

Pedant note

FORTRAN IV is one of the most precisely defined languages ever. One of its commands is the 'END' command, which the American Standards Institute defined as 'a line consisting of the letters E, N, and D, once only and in that order, preceded by, interspersed with and followed by any number of spaces'.

The generation game

Like paleontology, the history of computing is now seen as falling into definite stages. At times adjectives like 'prehistoric' and 'neolithic' seem to apply to computing too, but in practice they are described as First Generation through to Fifth Generation.

First Generation computers are the early valve-based ones, replaced by Second Generation transistorised ones. The Third Generation is computers like the IBM 360, built from simple integrated circuits.

As technology advanced, many integrated circuits could be etched on the same piece of silicon, leading to 'Very Large Scale Integration', the VLSI silicon chips such as microprocessors. Computers built with these, (most large modern computers), are Fourth Generation.

The Fifth Generation... well, that's the one that's just around the corner. The Japanese in particular have publicly declared their intention to build a 'Fifth Generation' computer by the end of the 80s. The idea is that Fifth Generation computers will have enough inbuilt intelligence to do several instructions at the same time and work out the best order to run programs in. Whether this succeeds remains to be seen.

officials and forced a settlement just prior to losing the case, so he wrote a most entertaining and vituperative book *Big Blue – IBM's Use and Abuse of Power* revealing just how IBM manages to make billions of dollars profit a year. A highly recommended read for would-be millionaires.

▲ (Possibly) the most powerful computer in the world? The Cray Y-MP/382, otherwise known as the Coffee Machine due to the seats around the outside. (The man on the right is refilling the whitener reservoir).

The soft things in life

Up until now, most of the history of computers has been to do with hardware. Early computer designers were more concerned with building a machine with real computing power than making it simple to use, and early computer operators were highly skilled technicians. You may think LocoScript is difficult to use, but that's peanuts compared to an IBM 360.

Computers work in binary code, and the very first systems had to be programmed in binary. A typical program would read as follows: `11011000 01110110 10110011` and so on. This is true machine code, and as you can see isn't very 'user friendly'. The operator used to have huge manuals of codes beside him, showing what combinations of 0s and 1s to use. The error messages when something went wrong with the program weren't much more sophisticated either – on the EDSAC at Cambridge the programmers wired up a loudspeaker to the main processor address lines. The computer would maybe access 10,000 memory locations a second, and 10 kilohertz is an audible frequency. As the computer read its memory, the loudspeaker would buzz: if the tone changed, and it buzzed with a high frequency, that meant the computer was locked in a loop or had crashed, so the programmers knew to reset it.

After a while, people began to yearn for a simpler way of programming. The first step was to develop 'assemblers'. An assembler is a program which takes a file of more-or-less comprehensible abbreviations for machine code instructions and turns it into a true machine code file that can be run by the computer. For example, you could type `CMP X,1` (meaning 'compare the variable X with 1') and the assembler would turn it into the binary version for you.

Assemblers were fine, but still a little crude. You tended to need thousands of different instructions to do simple operations. Programmers began to realise that they were using and re-using certain chunks of code over and over again. When printing a character to the screen, for instance, the three assembler lines

```
LD C,2
LD HL,TEXT
JSR $0005
```

would crop up again and again. To make life a little easier, 'Macro-Assemblers' were developed. With a Macro-Assembler you could set up a shortcut for yourself so that whenever you typed `PRINT TEXT` that was automatically expanded into the three lines above and assembled normally. By setting up enough of these 'macros', the programmer could cut down by a factor of 10 or so the number of commands needed for a given program.

Acronyms rule OK

Assembly language as a whole, even Macro-assembly language, is cumbersome to use. By the late 1950s it was clear that a simple way of programming computers was needed. Scientists needed to be able to process their calculations without employing programmers to work out the machine code for them.

The answer was to use 'compilers'. A compiler is a program which takes complex instruction written in a so-called 'high level language' like BASIC and converts it into machine code directly. This is how the vast majority of programs are written at the moment, and Mallard BASIC on the PCW works in roughly this way.

The first high-level language was FORTRAN (Formula Translation) around 1956. Algol (Algorithmic Language) came in 1958, LISP (List Processing) was developed in 1960, and COBOL (Common Business Oriented Language) around the same time.

At the start of the 70s, a spate of new languages emerged. BASIC (Beginners All Purpose Symbolic Instruction Code) and Pascal (named after the French mathematician Blaise Pascal) were designed in about 1969, and Prolog (Programming in Logic) made its appearance in 1972 at the University of Marseilles. C, the favoured language of most Americans these days, dates from around 1974. Ada (named after Ada Byron, reputedly the world's first programmer with Babbage's Analytical Engines) was developed in the early 80s and is intended to be the new international standard programming language. EXIT

The Software Generations

Because computer hardware is usually seen as being in five 'generations' (see the other box), programming languages have been split into five generations too. The divisions are slightly more arbitrary, but roughly speaking:

FIRST GENERATION: Machine Code

SECOND GENERATION: Assemblers, Macro-Assemblers

THIRD GENERATION: The conventional 'high level' languages like FORTRAN, Algol, LISP, COBOL, Pascal and BASIC. The new 'industry standard' programming language adopted by the Ministry of Defence, Ada, is still only a third generation language.

FOURTH GENERATION: These do for 3rd generation languages what 3rd GLs do for 2nd GLs. 4GLs like 'Mantis6 and 'Ideal' are program-generators; you provide a description of the program you want, and the 4GL writes it for you.

FIFTH GENERATION: A dubious category, generally taken to mean that the language is suitable for 'artificial intelligence programming'. For argument's sake we'll say that Prolog and Occam are 5th generation languages. Occam is a special language designed to produce programs for the new 'Transputer' computers – it splits programs into several chunks and runs them all in parallel, cutting the running time dramatically.

● *Next month: finishing off our story of the development of computers we take a look at the microcomputer revolution of the 70s and 80s.*

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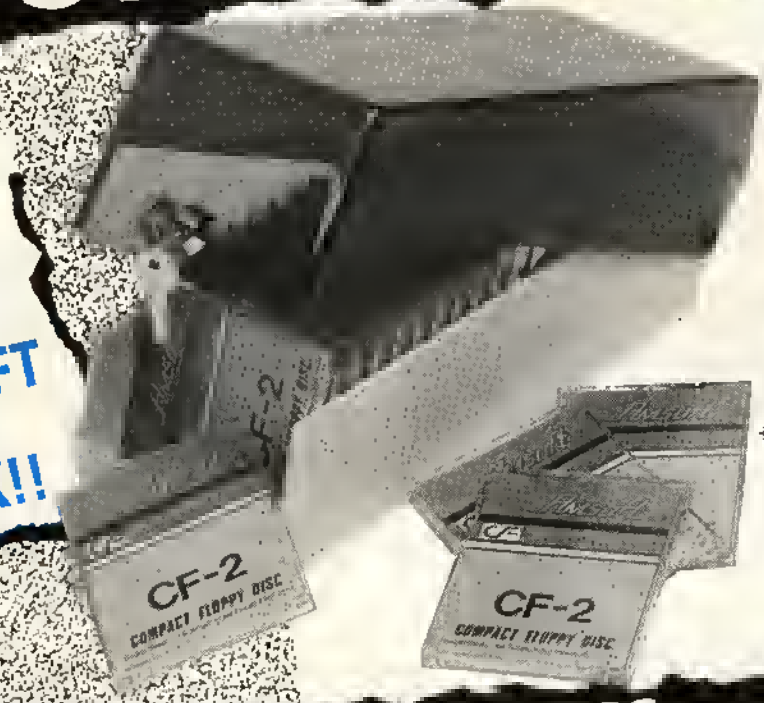

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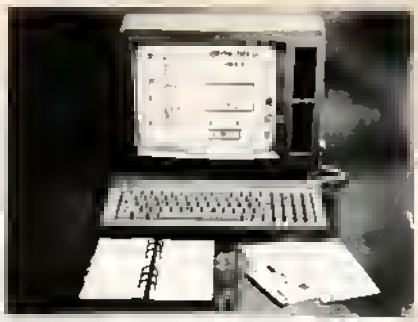

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THE HORROR IN THE VAT

The thing writers are supposed to ask about a new computer is, "Can I do my VAT on it?" Actually, many authors merely shudder uncontrollably at the thought of ever getting involved with the hideous complexities of VAT... but since it's the most bizarre and science-fictional concept in taxation since Morton's Fork, it seems worth a column.

Value Added Tax is one of those things like milk lakes and the Data Protection Act, which we didn't want but are among the compulsory benefits of EEC membership. The idea is that everyone who's registered for VAT has to charge tax on the "value" he or she has "added" to raw materials, but can reclaim the VAT charged by whoever supplied the materials.

So I buy a ream of paper for £3.45p, being £3 real cost plus 15% VAT. I increase its value immensely (or not very much) by writing a novel on it, for which a publisher offers me £1000. When rudely reminded that I'm registered for VAT and have a real VAT number of my own (just call me 292 6643 31, people), the publishers ungraciously cough up an extra £150. This I pass to the VAT collectors – that is, H.M. Customs & Excise. If I fail to do so, I will be awarded sanitary accommodation at Her Majesty's expense. But before paying up, I can deduct the VAT I paid on paper, ribbons, etc., thus coming out ahead by three-twenty-thirds of my stationery expenses. Glory, glory.

In equals out, or vice versa

This all sounds relatively straightforward, hardly more difficult than quantum field theory. Naturally the legislators weren't content to leave it at that. To start with, they use a special weird terminology of taxable "inputs" and "outputs". VAT sufferers slowly learn that all the money you take *in* must be called an *output* on the VAT forms, while what you shell *out* is naturally an *input*. Strong men have been known to break down and weep.

One good point amongst the complications is that books and food (except junk food) are "zero-rated", meaning you don't pay VAT on them, though this wretched Government would very much like to slap VAT on books. Sign the petition in your local bookshop, telling them not to: the idea sounds a complete disaster. In a country whose laws are so daft that schools and universities aren't allowed to register for and thus reclaim VAT.

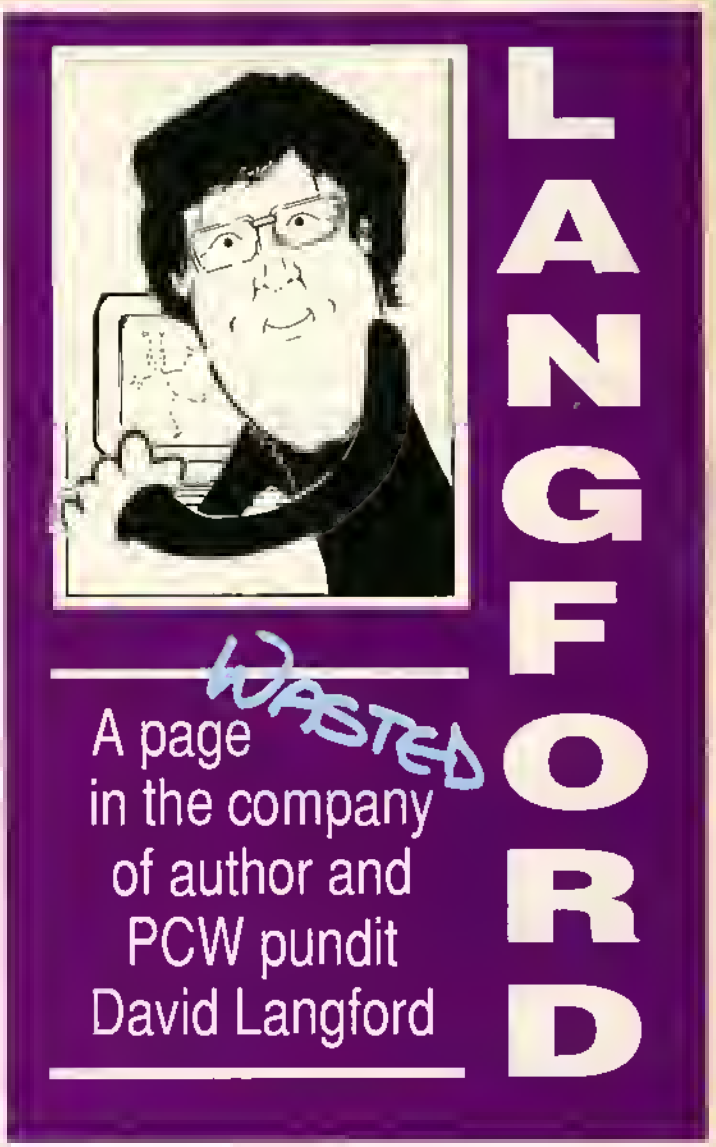
Then there are goods and services which are "exempt" from VAT, meaning again that you don't pay VAT on them, but the non-payment is made in subtly different ways. My accountant says I'm oversimplifying, having failed to include a third category of things on which no VAT is chargeable, these being "outside the scope of the tax". To mention these things would only confuse you, and so I won't.

Why bother?

Some writers say it's all a monstrous imposition, forcing you to do the books at regular intervals and to act as an unpaid tax collector. Totally disorganized writers like me can find the discipline of being made to work out three-monthly accounts quite useful, especially when the tax return comes round. If you don't mind paperwork, it's financially cheering: every time you pay £23 for a box of disks to hold your latest trilogy, £3 can be claimed back... and when it comes to buying a new computer, saving £13.04 in every hundred quid.

Don't all rush. It's no good trying to register for VAT until you're actually making money from writing. Registration is compulsory if your writing income is vast (well over £20,000 a year). For ordinary people it's "optional", meaning "we'll let you sign up if we like your face and you look profitable". Hopeful young authors are turned away for having made only a few hundred from writing.

Of course, if you're not able to register it's much less fun being part of the musical-chairs game of VAT in publishing: the buck, or fifteen per cent of it, stops with you. I had a very gloomy letter from a small magazine complaining of my wickedness in charging VAT (once you're registered, it's illegal not to). "J.G.Ballard didn't ask for VAT," said the embittered editor.



A particularly awkward plight was that of the anthologist who became the financial intermediary between the book's contributors – registered authors who charged him VAT – and the VAT-registered publishers to whom he couldn't charge VAT because of not being registered. Ouch.

Do you *still* want to do your VAT on the computer? Use a spreadsheet and remember that magic figure three-twenty-thirds. EXIT

The small print

Subtle, theological distinctions are enshrined in endless VAT booklets: I received 388 pages of small-print information when I registered and have been studiously ignoring quarterly updates ever since. One whole booklet was about nothing but the VAT status of second-hand electronic organs. There were vital differences between crystallized ginger (taxable at 15%) and ginger preserved in syrup (zero-rated); insoluble grit (15%) and soluble grit (zero); rabbit food (zero) and food put up for sale for pet rabbits (15%); angels dancing on the point of a pin (15%) or of a needle (zero)....

In this maze of eccentricity, writers occupy a particularly daft position. Books are zero-rated, but the Sublime Act Of Creation is taxable at 15%. The publishers pay VAT to the author, the author pays it over to Customs and Excise, and Customs and Excise refund it to the publishers. Many forms are filled in, many civil servants are made happy, and after six months the money all ends up where it began. The justification is that at the end of the line, members of the general public (you) pay hefty lumps of VAT which make the whole tortuous business worthwhile. But of course, books are zero-rated.

HIP-HIP-ARRAY!

Increase your basic BASIC by mastering arrays and ASCII codes

If you've been following the last three months' worth of this BASIC tutorial, you can sleep happily in the knowledge that you already know most of the simple commands. With a little inspiration you can probably write programs to do most of the simple chores in your life. Even so, a quick glance at our listings pages reveals there's still plenty more to get on with.

Up until now, whenever you have used a variable you have specifically named it. That is to say, every piece of information you use in a program has a name like 'total', 'first', 'answer$' and so on. However, there are situations where you can't do this because when you write the program you don't know how many variables you will need.

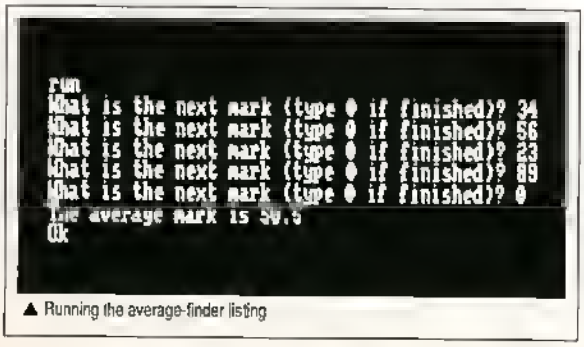
Consider this problem: suppose you are a teacher and you are setting an exam for the various classes you take, which range in size from 15 to 30 pupils. What you want to do is write a program which takes all their marks and prints out the average.

You know that you aren't going to need to store more than 30 different sets of marks, so one solution would be to have thirty variables and ask the user for a value for each. This has the disadvantage that when there are only 15 in the class you've got to pad out until all 30 results have been entered by typing in zeroes or something.

The best way to do it is by setting up an 'array'. An array is a variable with many different parts, each part accessed by its number. That sounds a bit abstract – what it means in this case is that one variable called 'marks' can be set up to have 30 different parts, one for each pupil. The first pupil's marks are held in the variable marks(1), the second in marks(2), etc. These array variables can be used in exactly the same way as ordinary variables, so `marks(1)=75` stores 75 as the first pupil's mark, and `PRINT "First mark is";marks(1)` prints out the mark.

The number you use to reference an array variable needn't be just a literal number like 1, it can itself be a BASIC variable. So, have a look at this program:

```
10 DIM marks(30)
20 pupils=0
30 INPUT "What is the next mark (type 0 if
finished)";nextmark
40 IF nextmark=0 THEN 80
50 pupils=pupils+1
60 marks(pupils)=nextmark
70 GOTO 30
80 total=0
90 FOR i=1 TO pupils
100 total=total+marks(i)
110 NEXT i
120 PRINT "The average mark is";total/pupils
```



▲ Running the average-finder listing

Line 10 is the special line which tells BASIC that 'marks' is to be an array variable with 30 elements. (DIM is short for 'dimension'.) Lines 20 to 70 read in the marks one by one until you type a zero, which is the signal that all the results are in. If there's any danger of someone actually scoring 0 marks, which would fool the program into thinking it had finished, you could make the 0s in lines 30 and 40 into –1s, an even less likely score. You'd then type –1 to finish. Every time you type a mark in, the variable 'pupils' is increased by one, so that when you get to line 80 you know that 'pupils' contains the total number of pupils in the class.

Lines 80 to 120 then work out the average mark by adding up all the individual marks and dividing them by the number of pupils. Notice how the FOR-loop uses the variable 'pupils' as its end point, and so only scans however many marks were put in, not all 30.

Now, the only restriction on this program is that it assumes you don't have more than 30 pupils. If you do try and type in 31 sets of data, you'll get an error message saying 'Subscript out of range in 60'. The 'subscript' (sometimes called the 'index') is the array variable's reference number; for example, with 'marks(5)' the subscript is 5. If you have 50 pupils, the only modification you need to make to the program is to edit line 10 to read `DIM marks(50)` instead of `DIM marks(30)`.

Something completely different

The hallmark of a professional program (as opposed one's own amateurish efforts) is that the screen display is usually very slick. In your own programs, the screen output is usually one line after another of plain text... informative but dull. On professional programs you get text in reverse video all over the screen. How is it all done?

The first thing to understand is the relationship between numbers and characters. The PCW can print up to 256 different characters on its screen, and every character has a number code called its ASCII code (pronounced Ass-key, and standing for American Standard Code for Information Interchange). These codes are listed in Appendix I.4 of the PCW manuals.

Given a number between 0 and 255, you can find out what character is corresponds to with the 'CHR$' command – try typing `PRINT CHR$(65)`, and a capital A appears on the screen. This is because 65 is the ASCII code for capital A. It's a bit perverse to do this, since `PRINT "A"` is much clearer and has exactly the same effect.

Looking further on in the appendix, the character codes between 128 and 159 represent a load of peculiar symbols.

Room for a littl'un

Computers, being computers, think that numbers start from zero, not one. When you declare an array like `DIM marks(30)`, you actually get 31 elements you can use, numbered marks(0) to marks(30) inclusive.

Ass's tale

The idea of ASCII codes for characters is that every computer uses the same conventions for the characters it displays. Thus a text file stored by one computer can be read by another. Of course, IBM has to be different – their larger computers use an almost totally incompatible character set called EBCDIC (Extended Binary Coded Decimal Interchange Code).

These are provided for you to make up boxes and shapes with. For instance, code 134 is a top left hand corner piece, code 138 is a horizontal border, and 140 is a top right hand box corner. So,

```
PRINT CHR$(134)+CHR$(138)+CHR$(138)
+CHR$(138)+CHR$(140)
```

prints a corner, three horizontal crosspieces, and another corner.

These CHR$(...) things can be treated in exactly the same way as normal text characters. They can be assigned to string variables, compared, printed and so on. Here is a short listing to print out a message in a box, as might be used by a well-known holiday resort:

```
10 horiz$=CHR$(138)+CHR$(138)+CHR$(138)
20 horiz$=horiz$+horiz$+horiz$
30 PRINT CHR$(134)+horiz$+CHR$(140)
40 PRINT CHR$(133)+" Welcome "+CHR$(133)
50 PRINT CHR$(133)+" to "+CHR$(133)
60 PRINT CHR$(133)+" Clacton "+CHR$(133)
70 PRINT CHR$(131)+horiz$+CHR$(137)
```

▲ Using the PCW's special graphics characters to put text in a box

The first two lines set up a variable called 'horiz$', which contains nine horizontal double-line characters. This is done in two stages – line 10 stores 3 lots of CHR$(138) in horiz$, then line 20 adds it to itself three times making nine in all. Character numbers 134, 140, 131 and 137 are the four corner pieces, and character 133 is a vertical double-line. Given that, the rest is simply a matter of trial and error to get the 'Welcome to Clacton' text centred in the box by putting spaces either side.

Unfortunately the PCW printer can't usually print any characters with ASCII codes of 128 and over. This means that although you can display your pretty boxes on the screen by printing CHR$(133) and so on, even if you use LPRINT in place of PRINT (which normally prints to the printer instead of the screen) the box characters won't print correctly. You'll have to be satisfied with using [EXTRA]+[PTR] to do a screen dump, but even this won't work on a 9512.

Escape codes

So that explains how to draw boxes and special graphics on the screen, but how do you do reverse video and underlined text? The secret lies in Appendix III of the PCW CP/M manuals, seductively titled 'Terminal Characteristics'. By printing special characters in the right order you can make the screen do all manner of wondrous things.

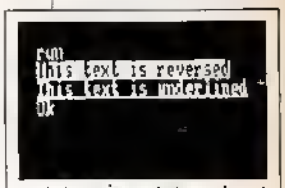
In Apppendix III are statements like "7 #07 BEL (Bell) Sounds a bleep". This means that ASCII code 7 (ignore the # sign and following number), which is known to the computing fraternity as the 'BEL' code, makes the PCW sound a beep. To see this in action, try:

```
PRINT CHR$(7)
```

and the PCW will beep. This can be very usetul as a prompt to catch the user's attention when an input is expected: print a beep just before the input statement.

However, the most interesting effects come later in the Appendix under 'Escape sequences'. ASCII code 27 is known as the 'escape' code or 'ESC' for short, and when the PCW tries to print a CHR$(27) it knows that the next few characters are a special instruction, not text to be printed. For example, the list reveals that ESC p sets up reverse video and ESC q stops it; ESC r starts underlining and ESC u ends it. (To print ESC q, for instance, you print a CHR$(27) then a character q.) So, the following listing produces the screen effect shown:

```
10 revon$=CHR$(27)+"p":revoff$=CHR$(27)+"q"
20 ulon$=CHR$(27)+"r":uloff$=CHR$(27)+"u"
30 PRINT revon$+"This text is reversed"
+revoff$
40 PRINT ulon$+"This text is underlined"
+uloff$
```



▲ Using 'ecape codes' can print text out in reverse video, or underlined.

Lines 10 and 20 set up four variables 'revon$', 'revoff$', 'ulon$' and 'uloff$' with the escape codes as defined in Appendix III. The idea is that printing 'revon$' will turn on reverse video until 'revoff$' is printed; 'ulon$' and 'uloff$' do the same for underlining. Unfortunately these escape codes only work for the screen – the printer uses different codes, which are listed in Appendix II.4 of the manual.

A final trick for experts to play with is the 'position cursor' escape code. The manual tells you that to move the cursor to row *r* column *c* on the screen you need to print the escape sequence ESC Y *r+32 c+32*. So to print a message starting at line 10 column 40, you first work out that 10+32=42 and 40+32=72. Then you would do:

```
PRINT CHR$(27)+"Y"+CHR$(42)+CHR$(72)+"Hello
world!"
```

Escape codes are difficult to understand at first, but very useful in presenting information nicely. If you've struggled to grasp the latter parts of this month's article, have a look at the listings we publish each month. Almost all of these use escape codes in some way, and are (usually!) good examples of arranging printed results on screen. EXIT

Please sir, who's top?

Suppose you want to modify the mark-recording program so that if records the pupils' names as well as just the marks; after entering all the names and marks you want to find out who came top.

What you have to do is set up *two* arrays, one for the names and one for the marks. In the program below, line 10 declares the same array for the marks as was used before, but also another array of 30 elements called 'name$' to hold the names (since names are strings in BASIC, the array name must end in a $ sign as for normal string variables). Because there's one mark per pupil you can arrange things so that, for example, if name$(10) is "Ezekiel", then Ezekiel's mark is stored in marks(10). In general, 'mark(x)' holds the mark for the pupil whose name is in 'name$(x)'.

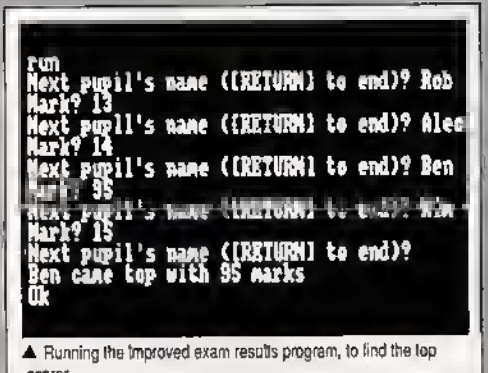
With all the marks entered it is quite easy to work out which is the highest mark, and therefore find the corresponding pupil's name.

Lines 10 to 80 work much as in the first listing, reading in up to 30 names and marks and storing them in their arrays. Lines 500 to 550 are a subroutine to find the highest mark. This is done by setting up a variable 'highmark' with the current best mark (it starts at zero), and another variable 'bestpupil' which holds the number of the pupil with that mark. On return from the subroutine you know that 'bestpupil' holds the number of the pupil with the top mark.

This program actually has a bug in it: if there are two pupils tied for the top place, only the first one you typed in will be reported as the winner.

You could try to modify this program to list the top *three* marks. To do this, after printing out the top mark, make 'marks(bestpupil)' zero. Next time you do a GOSUB 500, the variable 'bestpupil' will be set to the number of current highest mark in the array 'marks', ie. who came second. After printing that, you can zero it again and hence find the third pupil.

```
10 DIM name$(30), marks(30)
20 pupils=0
30 INPUT "Next pupil's name ([RETURN]
to end)";n$
40 IF n$="" THEN 90
50 pupils=pupils+1
60 name$(pupils)=n$
70 INPUT "Mark";marks(pupils)
80 GOTO 30
90 GOSUB 500
100 PRINT name$(bestpupil);"
came top
with";marks(bestpupil);"marks"
110 END
500 REM subroutine to find
highest mark in 'marks' array
510 highmark=0
520 FOR l=1 TO pupils
530 IF marks(i)>highmark THEN
highmark=marks(i):bestpupil=i
540 NEXT i
550 RETURN
```



▲ Running the improved exam results program, to find the top scorer

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JOIN THE ACADEMY

First there was Tau Ceti – now Tau Ceti II. Tony Flanagan skims through it.

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Early last year everyone was playing Tau Ceti designed by Peter Cooke. Now comes the sequel subtitled (with surprising originality) Tau Ceti II. As you might be forgiven for presuming, this appears to be essentially the same game. However, in its defence, it does contain some significant developments to justify, as it were, its existence.

The Galcorp Academy for Advanced Skimmer Pilots (GASP) is I suppose the twenty-third century equivalent of one of Mrs Thatch's new inner-city technical colleges. If you're an ordinary pleb, therefore, with the intelligence of a dead flea, forget it! Still, perhaps they'll make some exceptions.

Being admitted to the Academy is one thing, graduating is another. To qualify as an Advanced Skimmer Pilot you must successfully complete twenty missions. These are grouped into five levels of four in which you must obtain an average of ninety per cent to proceed to the next level. All missions take place on desolate outpost colonies...places, I would suggest, like Wolverhampton, Tunbridge Wells and, of course, Wales.

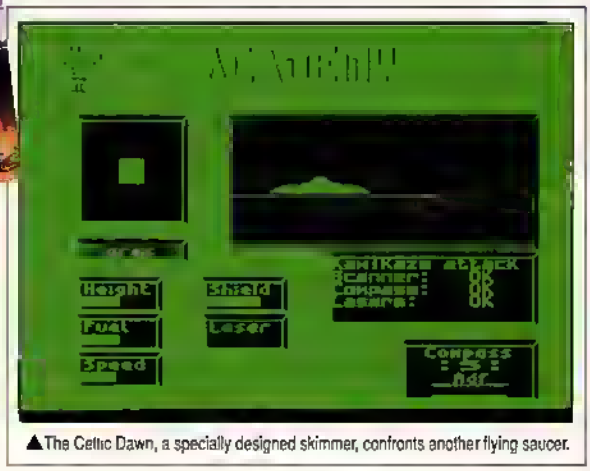
Skimmer of the year

The game's menu driven system is logical and easy to use. Having entered your name your first task is to select a particular mission. A wide range of detailed information is available on each one. This outlines, most importantly, the mission objective – whether it's simply a matter of frustrating a robot invasion or locating and destroying a renegade reactor. A description of the planet's climate is also given and a skimmer is recommended.

There are three skimmers to choose from – the Lenin, Lincoln or Wilson, depending I suppose on your national or political affiliations. Each has its particular strengths and weaknesses (the Lenin, for example, has no scanner).

One of the most interesting features of the game is the opportunity it gives you to design your own skimmers. This means first of all that you can alter what equipment your skimmer takes aboard, bearing in mind the weight and cost restrictions that apply. For example, you could decide to take fewer missiles but increase shield power. What is important, therefore, is that you understand exactly what the mission entails and establish your equipment priorities accordingly.

Secondly, you can also design the screen layout or 'view panel' of your skimmer, distributing the main window, the compass and scanner positions and so on. You can also choose the background texture for the view-panel from a choice of four patterns. Any skimmers you create in this way can be saved to disk as can game positions.



▲The Celtic Dawn, a specially designed skimmer, confronts another flying saucer.

The main screen shows the view from your cockpit window and the skimmer's instrument panel. The large window reveals the planet surface stretching to the horizon and any buildings or enemy craft in the vicinity. These come in a variety of forms but a full identification chart is given in the playguide.

Choose your weapon

Four kinds of weapon are available – anti-missile missiles, lasers missiles and delay bombs – which should enable you to hold your own with the forces stacked against you. The game's main strategy is to blast as many enemy craft as you can whilst not forgetting to return to base or find civilian or military supply centres where you can re-arm and repair your skimmer.

As in Tau Ceti there are jump-pads available for teleporting from colony to colony and you will have to make good use of flares for when the sun goes down. It's not easy trying to zap flying saucers when you can't see them!

All in all, Academy matches the addictiveness and playability of Tau Ceti but also contains many new features. An excellent sequel. EXIT

PLUSES
- Excellent game design
- Efficient and logical menu system
- Plenty to explore
- Interesting skimmer design feature

MINUSES
- Editing facility for view panel a little limited

GRAPHICS	■■■■■	ADDICTIVENESS	■■■■■
LASTING APPEAL	■■■■■	VALUE VERDICT	■■■■■

DON'T TELL SID

Adrian Wilkins looks at part 3 of the PD Toolkit

During the second world war, British forces in Burma captured some Japanese trucks and were amazed to find they were exact replicas of British-made Jeeps – even down to a common engine block number forming part of the casting. The Japanese, realising they had to find a rapid method of deploying a rough-terrain vehicle had themselves captured a British truck, "reverse engineered" it, and put it into mass production.

Reverse engineering is a technique commonly used in software development, especially by "hackers". Suppose for example you have acquired a software package written for the Bozo ZX99 micro, and you wish to install it on your PCW. Your PD club has copied the software onto 3" disks, but it doesn't work quite right – perhaps the serial port is at an alternative physical address, or the cursors just don't work, or something like that. So, armed with "SID" – the standard debugger distributed with all PCWs – you start to decode the software and hopefully hack it back into a more manageable shape.

SID has one fundamental problem: it only handles Intel 8080 instructions. The PCW range is based around the Zilog Z80 processor, and while most CP/M software is written for the 8080 and therefore works fine with the Z80, the reverse is not the case. The Z80 has extra instructions in its repertoire and an additional register set, and SID is incapable of decoding these. This is especially important if you are "single stepping" through the program. For example, the MEX communications program has a serial port driver at location 01CD hex, and SID cannot properly interpret the codes at locations 01D3 through 01D5.

```
A>SID
CP/M 3 SID - Version 3.0
#RMEX.COM
NEXT MSZE  PC  END
6500 6500 0100 DAFF
#L1CD
  01CD  PUSH B
  01CE  MVI  A,10
  01D0  LXI  B,00E1
  01D3  ??=  ED
  01D4  MOV  A,C
  01D5  ??=  ED
  01D6  MOV  A,B
  01D7  POP  B
  01D8  RET
  01D9  PUSH B
  01DA  LXI  B,00E0
```

▲ SID in trouble

Zzzzz

Enter Z80DEBUG (the Z80 Programmer disk, price £7.00, from Advantage, West One House, St Georges Road, Cheltenham GL50 3DT) which is a Z80 debugger. The corresponding code using the "Unassemble" option would be:

```
>U1CD

01CD  PUSH BC
01CE  LD   A,10
01D0  LD   BC,00E1
01D3  OUT  (C),A
01D5  IN   A,(C)
01D7  POP  BC
01D8  RET
01D9  PUSH BC
01DA  LD   BC,00E0
01DD  OUT  (C),A
01DF  POP  BC
01E0  RET
01E1  PUSH BC
01E2  LD   BC,00E0
01E5  IN   A,(C)
01E7  POP  BC
01E8  RET
01E9  LD   A,05
01EB  LD   BC,00E1
01EE  OUT  (C),A
```

Note that all opcodes are shown in Zilog format. Untortunately there are a small number of difficulties: firstly all Z80DEBUG's instructions are different trom SID's so you have to learn a new set; additionally there is no Assemble command; there is no command to exit the program (use G0000); and it does not recognise lower case characters (type the [ALT]+[ENTER] keys to enable CAPS LOCK). However these are offset by the fact that there is a bank-switch toggle (ALT+B) between the TPA and the BDOS area, which is powerful if a little dangerous.

```
ADaaaa eeee       = dump memory in ascii
ALaaaa            = ascii key input to memory
ASaaaa eeee a*10  = ascii search 10 bytes max.
Daaaa eeee        = display memory
Faaaa eeee hh     = fills memory/hex
Gaaaa             = restore regs/go to
Hhhhh hhhh [or]   Hhhhh(+/- Operations)  = add/sub hex.
Laaaa             = display/change ('X to end)
Maaaa eeee dddd   = move mem start/end/dest
P                 = load file at 0100H
Q / nn            = instruction trace for nn
Raaaa eeee dd nn  = sch mem for dd/replace with hh
Saaaa eeee hh*10  = search memory for 10 bytes max.
Taaaa             = insert trap address - 5 maximum.
Uaaaa / nnnn      = disassemble machine code
Vaaaa eeee dddd   = compares aaaa to dddd
Waaaa eeee        = write disc file start/end
X/R - Y/R         = disp/chg regs/alt regs.
Zaaaa eeee        = zeros memory
? = this menu       * & % = additional help
>
```

▲ Z80DEBUG commands

Also on the disc are a number of other utilities: Z80ASM (a Z-80 opcode assembler), ZMAC (ditto), ZLINK (another linker), RESOURCE (a debugger no better and no worse than SID itself), XLT8-80 (translates Z80 opcodes to 8080 format) and UNLOAD/MLOAD (converts .COM files to ASCII and vice-versa – useful for file transfers). There is also documentation on all the above.

Not on the Advantage disc, but available on some Bulletin Boards, is another Z80 debugger called ZSID. As its name suggests this is SID with the Z80 extensions added.

EXIT

Give generously

The PD page is always on the lookout for good useful programs from any source, provided that they are truly in the public domain (i.e. free of any copyright restriction on their use) or "shareware" (the users send a nominal fee to the author if they intend to carry on using the program after an initial free sampling). Although the conventional sources (user clubs and software libraries) contain hundreds, even thousands, of titles, many of these are simply updated versions of each other or the same program differently configured for alternative hardware.

So if you have been party to the creation of any software 'gizmos' which fall into these categories and you would like to have them aired in 8000 Plus, then send a disk (return sae required) to the PD Editor. Alternatively if your program is available on a bulletin board somewhere then let us have the details and we'll investigate.

The PD page will consider any serious application – databases, spreadsheets, business uses, but please no games unless you have something really imaginative. No commercial programs, please, unless you are offering incredible value (say, at the £5 to £7 mark).

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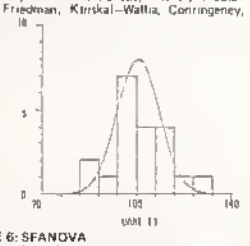

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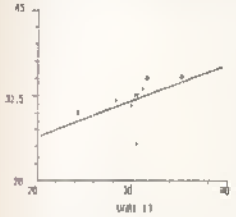

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LISTINGS

Serving your BASIC needs: four fun-filled pages of listings

Spell Checker

The careful attention to detail that a computer can give makes it ideal for use as a spelling checker. It is possible to pore meticulously over line after line of your document several times and still miss an obvious misdtake that the PCW would pick out straight away.

```
Ok
run
Spell check file, Maintain dictionary or Quit (s/m/q)? s
What is name of the file to check? test
aardvark          Add/Correct/Ignore/Quit (a/c/i/q)? a
armadillo         Add/Correct/Ignore/Quit (a/c/i/q)? a
abacus            Add/Correct/Ignore/Quit (a/c/i/q)? a
gerbil            Add/Correct/Ignore/Quit (a/c/i/q)? a
llama             Add/Correct/Ignore/Quit (a/c/i/q)? c
Replace by what word? llama
```

So now your problems are over. Just type in a mere 68 lines of BASIC and you need never worry about making little slips transposing two charatcers or simply missing a leter out. It's also is an interesting use of Mallard BASIC's Jetsam file handling so it's worth a look.

It allows you to build up a dictionary of correctly spelt words, all held in alphabetical order in Jetsam files. To spell check a document you need it saved in ASCII – as in the LocoScript 'Make ASCII file' option ([77] in Loco 1 and [71] in Loco 2). Put it in group 0 ot the same disc as the spell-check program and then run up BASIC and the spell checker program.

Alternatively, save it to a separate disc, run up CP/M, and copy the document to the M drive using PIP. Then insert your BASIC disc and spell check the document with its name prefixed by `M:` (and PIP the checked version back to disc before switching off). If you are checking a document in the B drive remember to prefix the file name with `B:`.

The program takes each word and checks it against the dictionary. It it tinds a word it doesn't know it gives you the option of (C)hanging the word if its wrong, (I)gnoring it (say tor a name you don't want on the dictionary) or (A)dding the word to the dictionary. Changing the word involves typing the entire correct word in when prompted.

The program automatically checks fo see if the correct dictionary files are on disc (as with any Jetsam program you need two tiles) and if they are not there it will offer you the choice ol starting a new one. It might be worthwhile having a separate dictionary tor specialist words.

Obviously the hardest work (once you have the program typed in and working) is building up an accurate dictionary. A reasonable start is to take the READ.ME file from your LocoScript disc, convert it into ASCII and add that all in. Then it's a matter of having the dictionary by you for the tirst few times you use the program to make sure the words you are adding are correct.

If a wrong word gets through into the dictionary you still

```
Ok
run
Spell check file, Maintain dictionary or Quit (s/m/q)? m
What is the word to remove? armadillo
Delete another word? (y/n)? y
What is the word to remove? llama
llama not in dictionary
Delete another word? (y/n)?
```

How to type in a listing

Load up Mallard BASIC – to do that, insert your CP/M disc, reset the machine and at the A> prompt type `BASIC`[RETURN]. Now you see the 'Ok' prompt. Just type in the lines of the listing exactly as they are printed on the page (but not the numbers on the extreme right). Type `LIST` af any time fo print out your typing so far to the screen; It you want a printout to pore over, type `LLIST`.

Mistakes made before you press RETURN can be corrected with the DEL keys, otherwise you have to use the line editor. Suppose you've made a mistake in line 100; type `EDIT 100` and then you can use the cursor keys and DEL keys to correct it. Press RETURN when the line is OK. To delete a whole line, type its number only and press RETURN.

When you've finished, save the program to a disc by the command `SAVE "FRED` (or any other suitable name of eight letters or fess). To run the program, type `RUN`.

Programs rarely run tirst time, but when BASIC encounters a mistake it tells you where it is. 'Syntax Error in line 60' means a mistake in that line (though the actual typing error may have occurred in a previous line, causing problems in this one). Other error messages can often occur too. Use the EDIT command to correct it.

You can rerun the program another day by loading BASIC up as before and, with the disc on which you saved the program in the drive, typing `LOAD "FRED` and then `RUN`.

```
10 OPTION RUN: CLEAR,,,,255                                                                                    08F9
20 ON ERROR GOTO 660                                                                                           0784
30 recleng=20: BUFFERS 32: temp$=SPACE$(recleng-2)                                                             1353
40 DEF FNletter(c$)=(c$)="A" AND c$(="Z") OR (c$)="a" AND c$(="z") OR (c$="'" AND RIGHT$(word$,1
))="'")
50 IF FIND$("DICT.DAT")="" OR FIND$("DICT.KEY")="" THEN GOSUB 540                                              1B45
60 OPEN "K",#1,"DICT.DAT","DICT.KEY",2,recleng                                                                 1554
70 FIELD #1,recleng-2 AS dict$                                                                                 0F68
80 INPUT "Spell check file, Maintain dictionary or Quit (s/m/q)";ans$                                          09D1
90 ans$=LOWER$(LEFT$(ans$,1))                                                                                  1A7E
100 IF ans$="m" THEN GOSUB 590 ELSE IF ans$="q" THEN 680 ELSE IF ans$="s" THEN 120                             08B3
110 GOTO 80                                                                                                    1A79
120 INPUT "What is name of the file to check";check$                                                           0363
130 IF FIND$(check$)="" THEN PRINT "File not found": GOTO 80                                                   1363
140 dot=INSTR(check$,".")                                                                                      148D
150 IF dot=0 THEN new$=check$+".CHK" ELSE new$=MID$(check$,1,dot-1)+".CHK"                                     085C
160 OPEN "R",#2,check$,255: FIELD #2,255 AS line$                                                              1598
170 OPEN "O",#3,new$                                                                                           0E1F
180 GET #2                                                                                                     054F
190 FOR I%=1 TO LEN(line$)                                                                                     0318
200 char$=MID$(line$,I%,1)                                                                                     09A0
210 IF FNletter(char$) THEN 280                                                                                0736
220 IF LEN(notword$)>250 THEN PRINT #3,notword$;: notword$=""                                                  0A90
230 notword$=notword$+char$                                                                                    16A0
240 IF RIGHT$(word$,1)<>"'" THEN 260                                                                           0A86
250 notword$="'"+notword$: word$=LEFT$(word$,LEN(word$)-1)                                                     09F5
260 IF word$="" THEN GOSUB 320: PRINT #3,word$;: word$=""                                                      1657
270 GOTO 300                                                                                                   1026
280 word$=word$+char$                                                                                          039C
290 IF notword$="" THEN PRINT #3,notword$;: notword$=""                                                        0949
300 NEXT I%                                                                                                    1476
310 IF NOT EOF(2) THEN 180 ELSE 680                                                                            0360
320 REM Check 'word$' against dictionary                                                                       0A66
330 IF LEN(word$)<2 THEN 510                                                                                   0F72
340 IF LEN(word$)>18 THEN PRINT "Ignoring ";word$;" - too long": GOTO 510                                      09B0
350 IF LOWER$(RIGHT$(word$,2))<>"'s" THEN 370                                                                  1B67
360 notword$=RIGHT$(word$,2)+notword$: word$=LEFT$(word$,LEN(word$)-2)                                         0CF6
370 LSET temp$=LOWER$(word$)                                                                                   1AA8
380 ok=SEEKKEY(#1,2,0,temp$)                                                                                   08F3
390 IF ok=0 THEN 510                                                                                           09B6
400 PRINT CHR$(27)+"p"+word$+CHR$(27)+"q";                                                                     0678
410 PRINT TAB(20);"Add/Correct/Ignore/Quit (a/c/i/q)";: INPUT action$                                          0B66
420 action$=LOWER$(LEFT$(action$,1))                                                                           1B1E
430 IF action$<>"a" THEN 470                                                                                   0C77
440 LSET dict$=LOWER$(word$)                                                                                   0863
450 ok=ADDREC(#1,2,0,dict$)                                                                                    08D8
460 IF ok=0 THEN 510 ELSE PRINT "Add failed. Check disc space.": GOTO 680                                      07AD
470 IF action$<>"c" THEN 490                                                                                   1974
480 INPUT "Replace by what word";word$: GOTO 320                                                               0873
490 IF action$="q" THEN 520                                                                                    11A7
500 IF action$<>"i" THEN 410                                                                                   08B2
510 RETURN                                                                                                     0862
520 REM Quit on user's instructions                                                                            03B7
530 CLOSE #1: CLOSE: KILL new$: END                                                                            0EB5
540 REM Set up new dictionary                                                                                  0B84
550 INPUT "Dictionary not on disc - create new one (y/n)";new$                                                 0B8A
560 IF LOWER$(LEFT$(new$,1))<>"y" THEN END                                                                     1755
570 CREATE #1,"DICT.DAT","DICT.KEY",2,recleng: CLOSE #1                                                        0CFB
580 RETURN                                                                                                     120D
590 REM Dictionary maintenance - delete mistakenly added word                                                  03C5
600 INPUT "What is the word to remove";rem$                                                                    194C
610 LSET temp$=LOWER$(rem$): ok=SEEKKEY(#1,2,0,temp$)                                                          10D8
620 IF ok=0 THEN ok=DELKEY(#1,2) ELSE PRINT rem$;" not in dictionary"                                          1210
630 INPUT "Delete another word? (y/n)";del$                                                                    195B
640 IF LOWER$(LEFT$(del$,1))="y" THEN 600                                                                      0F6C
650 RETURN                                                                                                     0C64
660 REM Error handler - make sure Jetsam files properly closed                                                 03C0
670 PRINT"Error";ERR;"in line";ERL;"- abandoning spell checking"                                                1940
680 CLOSE #1: CLOSE: END                                                                                       1A2F
                                                                                                               08A6
```

have the opportunity to delete it using the 'Maintain Dictionary' option. Just type in the incorrect word when prompted and it is erased. If you are trying to to remove a word that is not in the dictionary the program will tell you.

The only major limitation is that the program cannot handle words of more than 18 letters (if you know words like that why are you reading 8000 Plus?) It also disregards two- and one-letter words.

Once you have successfully checked your document it can be loaded back into LocoScript ('Insert Text' option from the same menu as 'Make ASCII file') to allow you to add all your fancy print instructions.

Give us a line break

Try as we might we can't always get the lines of the listing to fit in one line on the screen. In this listing Line 40 runs over the end of the line. Whatever you do don't press RETURN. Just keep on typing and the line will word wrap although it will probably break at a different place on the screen than it does when printed out.

Memory Scanner

by Ben Goodwin

As we all get a little more experienced with our PCW's there are times when we want to explore the hidden depths of the machine. And this is a task made much easier with Mr Goodwin's clever little memory scanner. What it does is print on screen ('dump' in eloquent programmer's jargon) the contents of any part of memory that you want. What you will see is a screenful of apparently meaningless numbers and letters but it really can tell you a lot.

What happens is that the program asks you for an address to start from – the first byte of memory you want shown (one character or number occupies one byte). You can give this in decimal (or in hex if you prefix it with &H.) It then types out lines of 10 double figures on left side and the ASCII equivalent (the letter that each double figure represents) on the right. On the far left there is the number of the first byte; to find the number of a specific byte just count along the line. This way you can quickly see the values of the byte you want and all the bytes round about it. The program will keep printing out lines until you press the space bar once and can be restarted with a second press. It is stopped entirely by pressing STOP.

Where this comes in useful is for understanding those mysterious PEEKs and POKEs that litter BASIC listings. A PEEK is when you look at the value of a specific byte and a POKE is when you actually change the value. If you don't know too much about this a quick scan through the CP/M article in our March edition might help to sort things out.

The program acts as a PEEK but gives you the benefit of looking at more than one byte. It also gives you a quick way to check you have changed a byte correctly with a POKE. But perhaps the most useful facility is to allow you to explore all sorts of areas of memory in BASIC quickly and easily. Then with a bit of effort (like working out the ASCII code for various characters) you can then change the BASIC error message 'NEXT MISSING IN 310' to read 'NOSE MISSING IN 310'. Hours of harmless fun although it does disappear as soon as you leave BASIC. And watch out for poking to addresses you don't know. You find you can very quickly crash the machine.

▲ A dump before and after setting the PCW's internal time to 10.53:21. The three bytes to look at are the ones following FBF6.

```
10 DIM a$(15):OPTION RUN:ON ERROR GOTO 20                          1027
20 PRINT CHR$(27)+"H"+CHR$(27)+"E"                                 086B
30 INPUT "Address to start dumping at.....",s$                     1103
40 IF LEN(s$)>6  OR s$="" THEN 20                                  0795
50 PRINT CHR$(27)+"f"                                              05F5
60 s=VAL(s$)                                                       03C0
70 ad$=HEX$(s)                                                     03EF
80 FOR ad=1 TO 3                                                   0528
90 IF LEN(ad$)<>4 THEN ad$="0"+ad$                                 08EF
100 NEXT ad                                                        0394
110 PRINT:PRINT ":"+ad$+" ";                                       0933
120 FOR i=0 TO 15                                                  0589
130 GOSUB 250                                                      03F0
140 a$(i)=CHR$(PEEK(s+i))                                          06EC
150 h$=HEX$(PEEK(s+i))+" "                                         068C
160 IF LEN(h$)=2 THEN h$="0"+h$                                    0852
170 PRINT h$;                                                      0426
180 NEXT i                                                         0363
190 PRINT"/ ";                                                     0423
200 FOR z=0 TO 15                                                  0586
210 GOSUB 250                                                      03ED
220 IF ASC(a$(z))<32 THEN PRINT"."; ELSE PRINT a$(z);              131B
230 NEXT z                                                         036B
240 s=s+16:GOTO 70                                                 068A
250 j$=INKEY$:IF j$=CHR$(3) THEN PRINT CHR$(27)+"e":END            1119
260 IF j$=CHR$(32) THEN WHILE INKEY$="":WEND                       0E42
270 RETURN                                                         03C0
```

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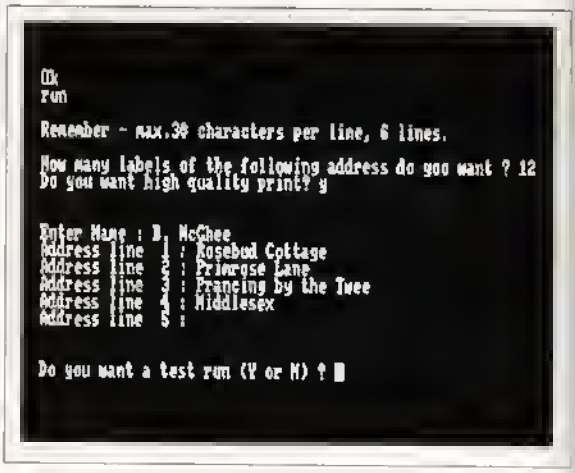
Labeller

by Michael Rose

You would think something like printing labels would be simple on the PCW, which is why we have printed this short BASIC program to do make it easy. This is for those times when you have several identical labels to run off. Just run the program and answer the questions.

It will ask how many labels you want and whether you want high quality print (press anything other than y for draft quality). Then just type the name and address in as prompted. You have up to six address lines each of which can hold 30 characters. If you don't need all six lines just press [RETURN] when you're finished.

You will then be asked if you want to do a test run. This simply types out six lines of X's on a label to see whether you have everything lined up correctly (by far the most difficult part of label printing). Re-align your labels and do a test run again if necessary. Then it is a simple matter to print out any number of labels with that name and address.




```
0 '                                                                              0020
10 LPRINT CHR$(27)+"c"                                                           0684
20 PRINT cl$:PRINT"Remember - max.30 characters per line, 6 lines."              19A7
30 PRINT:INPUT "How many labels of the following address do you want ";X         1ECD
40 INPUT "Do you want high quality print";an$                                    1222
50 IF UPPER$(an$)="Y" THEN LPRINT CHR$(27)+"m"+CHR$(1) ELSE LPRINT CHR$(27)+"m"+CHR$(0)  1BAA
60 PRINT:PRINT:LINE INPUT "Enter Name : ";name$                                  1395
70 FOR no=1 TO 6:PRINT"Address line "no": ";:LINE INPUT;addr$(no):PRINT          1B62
80 IF addr$(no)="" THEN 100                                                      0849
90 NEXT                                                                          03AD
100 PRINT:PRINT:INPUT "Do you want a test run (Y or N) ";an$                     18B2
110 IF UPPER$(an$)="Y" THEN 180                                                  08E2
120 FOR j=1 TO X                                                                 05CF
130 LPRINT name$                                                                 06A4
140 FOR no=1 TO 8: LPRINT addr$(no):NEXT no                                      102F
150 NEXT j                                                                       035E
160 PRINT:PRINT:INPUT"Do you want another label (Y or N) ";an$                   19F5
170 IF UPPER$(an$)="Y" THEN 20 ELSE END                                          0BA6
180 PRINT:PRINT:PRINT"Align labels in printer and press a key."                  1B7E
190 WHILE INKEY$="":WEND:LPRINT                                                  0D26
200 FOR n=1 TO 6:LPRINT STRING$(30,"X"):NEXT n:LPRINT:LPRINT:LPRINT              1A33
210 INPUT "Do you want to test/realign (Y or N) ";an$:GOTO 110                   16E3
```

Good programs needed !

We're looking for well written programs of up to 50 or so lines which we can print in these listings pages each month. Of course, since we can fit more of the shorter listings in, and they're easier to type, the longer ones have to be really special!

If you can program you could earn hard cash and instant fame by having your program printed in 8000 Plus. Give instructions on an accompanying sheet for using the program, and if there are any useful modifications that readers can make by simple edits to customise the program, mention those too.

To submit a listing you must supply:

1) A printout of the listing;
2) A disc on which it is saved;
3) A stamped addressed padded bag for its return;
4) An explanation of what it does and how to use it;
5) A signed statement confirming that the program is your own work and hasn't been submitted to anyone else.

Send all this to *Listings, 8000 Plus, Bath BA1 1EJ* and allow up to 40 days for the return of your disc – we assess the listings in a batch once a month.

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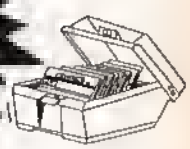

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TIP-OFFS

Three Invaluable Pages Of Facts, Fiddles, Secrets...

We don't have to spell it out for you: TipOffs gives you more valuable information in a few letters than a dictionaryful of mnemonics. Squeezing the impossible out of your PCW, beating the manual, short-cutting through well-known programs: it's all here. If you have any magic spells in Mini Office, LocoScript or any other popular package, let us know at *TipOffs, 4 Queen St, Bath, BA1 1EJ.* The best ones earn hard cash: TipOffs also means £Thirty Immediately Posted Off For Flashy Solutions! Earning the money this month is Shane Comins of Whitstable for his ingenious ideas on DIY title screens...

Design your own screens

How would you like your own personal opening graphics screen to show up whenever you run CP/M, just like those games programs do? Well, owners of Stop Press can do just that. It sounds a bit involved, but is much easier than it appears, and the results are spectacular!

The secret is hacking the into the Stop Press file called 'SUBMIT.COM', which actually isn't anything to do with the SUBMIT.COM you have on your CP/M discs. Whenever CP/M starts up, it looks for a file called SUBMIT.COM and if there's also a file PROFILE.SUB on the disc, it runs SUBMIT.COM. On Stop Press, SUBMIT.COM is the program which runs the opening screen and is thus run automatically by virtue of its name. By hacking it to show your own screen, and putting this new SUBMIT.COM on your startup disc, your screen will run every time CP/M starts up.

Here's what to do. First create and save your opening screen in Stop Press on the canvas. Save it using the 'canvas' option. Call it any name you like, WELCOME say, and Stop Press will save it as WELCOME.SPC for you.

Now run up CP/M and copy SID, PIP, SUBMIT and WELCOME.SPC to drive M. You do this as follows. At the A> prompt, type `PIP` [RETURN]; you seee an asterisk prompt. Type `M:=A:PIP.COM` [RETURN]. Then inssert side 3 of your systems discs and type `M:=A:SID.COM` [RETURN]; next inssert side 1 of your Stop Press discs and type `M:=A:SUBMIT.COM` [RETURN]; finally insert the disc with your screen canvas on and type `M:=A:WELCOME.SPC` [RETURN]. Another M gets you back to the A> prompt.

Next enter drive M by typing `M:` [RETURN] You can now use SID to hack into the file called SUBMIT.COM, tell it to run the program of your choice (say ZAP.COM) and load SUBMIT with the picture you've just created in Stop Press. Type `SID SUBMIT.COM` [RETURN]; you see SID's # prompt. Type the following exactly:

```
S01F7 [RETURN]
"ZAP(five spaces)[RETURN]
. [RETURN]
S0277 [RETURN]
"ZAP(5 spaces)[RETURN]
. [RETURN]
R'WELCOME.SPC,0300[RETURN]
WSUBMIT.COM[RETURN]
```

You *must* pad out the name of the program you want to run to *exactly* eight letters, hence ZAP is followed by five spaces. If you don't want to run any program automatically on startup, and just want to display your screen when you start up CP/M, enter eight spaces. If you mistype something and get the ? reply, just re-enter your line: the query shows that SID has ignored your previous line.

The SUBMIT.COM in the M drive now is your hacked and personalised version. All you need do now is insert your ZAP startup disc or CP/M disc and type `M:PIP A:=M:SUBMIT.COM`. On starting up, so long as there's a PROFILE.SUB there, your welcome picture will be drawn spectacularly to the screen. After a few seconds your specified program will run, or it you gave the program name as blanks, the A> prompt appears and the picture remains.

Shane Comins
Whitstable, Kent

VAT's your lot

A useful little addition to the LocoMail 'calculator' (Issue 18, March) is a phrase under v, perhaps, consisting of 0.130434783. The significance is that by multiplying a VAT-inclusive figure by this, you extract the amount of VAT from the total. Though only two places show on screen, it appears to calculate to nine places.

Protext users can define a similar phrase to nine places to use in the CALC facility, though it's only accurate to two figures!

B M Smith
Chelmsford, Essex

Yuppies corner

Filotax users will be delighted to discover that their continuous paper fits the little magic folder with hardly any alterations. Not only does this save you the exorbitant price of custom-made inserts, it also lets you keep your information easily updated – new address or telephone number files, for example, can be printed out in seconds from LocoScript. Here are

▲ Setting up the 'filofax' paper type in LocoScript 2

some suggested layouts:

LocoScript 2:

First set a new paper type. In the disc manager, press [f6] 'settings' and select 'new paper type'. Key in the data below and then 'create' and choose the 'write to SETTINGS.STD' option – the type will always be available from now on.

Paper: filofax
Continuous stationery (set with ⊡)
Height 39
Left Offset 0
Top gap 1
Bottom gap 2
Ignore paper sensor

The following format set up in a TEMPLATE.STD will ensure ideal page lengths and alignment with the holes. Just enter the document, press [f2] and 'change layout'.
Left margin 0 (set with [f1])
Right margin 32 ([f1])
Tabs as required (set with ⊡)

A suggested layout (set with size [f4] is Pitch 15 LS1 CR+0 LP8, though for lots of text – eg. name and address files – you might try 15 pitch subscript and half line spacing. [EXIT] and [ENTER] to the document.

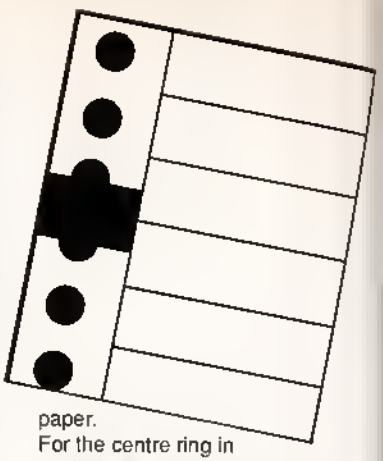
Now set the template to the 'filofax' paper type by pressing [f1] 'Document setup' [ENTER] and then [f5] 'Pages'. Move the cursor over 'filofax' and press ⊡, then [ENTER], [EXIT] and [ENTER]. Then select from the same 'Pages' menu 'Page layout'. Set the headers and footers to zero. [EXIT]s and [ENTER]s take you back to the main document. On printing out, remember to switch to 'paper type intended for document' when you're prompted, as the printer might be expecting to print in another paper type.

LocoScript 1:

Create a TEMPLATE.STD and get into the header to set the layout above by [f7] [RETURN]. Press [f7] 'Options' and then [f7] for the 'Page size menu'. Set the page length to 48, header zone 0, header text position 1, footer zone 0, footer text position 48. [ENTER] and then press [f1] 'layout'. SEt the pitch size and line pitch and then press the down cursor to set the margins ([f1] for left, [f2] for right, and [f3] for tabs). [EXIT]s and [ENTER]s get you back to the main document. Before printing, press [PTR] and then [f1] which allows you to set the 'form length' – make this 39 and the gap length 0, and select 'continuous printing' with the ⊡.

Start the print run at the very top of the page. You can use scissors to separate the sheets; a guillotine is better. Don't worry about the horizontally perforated ends of pages – they are perfectly strong enough, as is the vertical one. Indeed ripping a sheet out of the folder usually tears the holes and not the perforations.

Four of the six rings (the top and bottom of each group) slip perfectly into the holes on the paper.



For the centre ring in each group, snip through to the perforations on either side of the ring and pull that bit out. You can do several sheets together and it only takes seconds.

Environmentally aware filofax users can reverse the paper for a second print run and use both halves of the sheet.

Philip Swallow
London

The chemistry is right

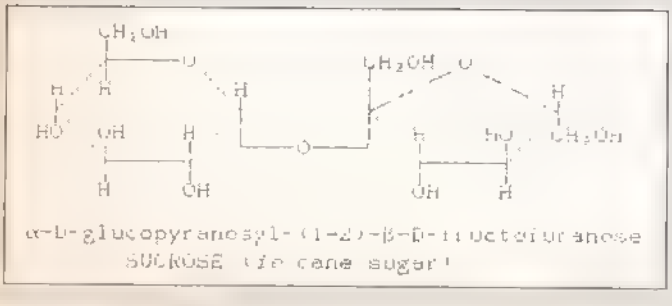
Anyone who needs to include chemical structures in the middle of their documents would do well to invest a few hours with Locochar. There are a number of very worthwhile additions you can make.

i) The EXTRA ringed numerals 0 to 9 aren't much use, so you can convert them to the subscript version of the same numerals (remove the ring and copy downwards manually). Simple formulae such as H_2O, H_3PO_4 etc. no longer require codes pushing them off the screen.

ii) Chemical bonds will link up quite nicely (using half line spacing and line pitch 5) if you prepare a set of diagonals that go right to the corners of the letter space. A set of vertical strokes at the extreme right and left, and dead centre, and a full width horizontal at the base enable just about all chemical line structures to be achieved.

iii) Benzene rings are easy but double bonds will need repeated lines offset by an odd-pitched space such as 17 pitch in a 10 pitch diagram.

Tom Coultate
Leighton Buzzard, Beds



Listing list

If you're writing a long BASIC program, it can save a lot of time if you keep a reminder of what all those GOSUBs and GOTOs are for, say in a few REM lines (remark lines which BASIC ignores) in a 'directory' list at the beginning of the listing. Keeping it up to date as you edit the listing and so change some of the GOTO and GOSUB line numbers can be a pain, but there's a simple way to make BASIC do it for you.

Make your directory consist of normal commands followed by a remark saying what each does. Then, every time you renumber with the RENUM command, BASIC will renumber your directory for you. To make sure your directory GOTOs and GOSUBs are not treated as part of the program, put a GOTO at the beginning to leap-frog over your directory.

Denis Crowley
Colwyn Bay, Clwyd

```
10 GOTO 1000  : REM - Leapfrogging over the directory
20 '
30 '-----------------------DIRECTORY-----------------------
40 '
50 GOSUB 500  : REM - subroutine printing results to screen
60 GOSUB 650  : REM - printing results to printer
70 GOTO  730  : REM - if nil zero, print error message
80 GOTO  770  : REM - if too big, print error message
90 GOSUB 1090 : REM - works out number of days between two dates
1000 (program continues here)
```

Group name

You can name a group in Protext by creating an empty file with the extension .GRP – PLAY.GRP, BLOOD.GRP and so on. At the head of the directory you'll get the message 'Group 0 PLAY' and so on.

Tony Parnham
Burton-on-Trent, Staffs

No marks?

Frustrated by 'Missing Address Mark' messages on drive B? Advanced users read on. Give the monitor a sharp, gentle tap when you hear that deadly whirring as the drive stumbles to read your disc and all should be well.

G J & F S Hewitt
Aberfoyle, Stirling

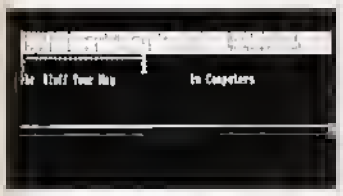
Big head

Protext can only handle one-line headers, but you can get multi-line headers printed by using the fact that Protext doesn't format automatically.

Just type all the 'lines' of your header on a single line, separated by spaces. When it prints out, the header line will be too long and will spill over onto the second and subsequent lines. It'll take a couple of goes to get the spacing right.

The command FORMAT doesn't affect ruler lines so you can safely use it to tidy up the text.

A D Lewis
London



Bluff Your Way in Computers

Glaring problems?

If your PCW screen is difficult to see because of sunshine glare, you can make things much easier on the eye by using PALETTE.COM (trivia buffs will be interested to know that it's the only utility on both your systems discs!)

This reverses the screen from green on black to black on green; to use it just insert your CP/M disc and type PALETTE 0,1 (to change from reversed to normal) or PALETTE 1,0 (change from normal to reversed).

Unfortunately it won't work with LocoScript, so you'll just have to try a screen filter!

Smudger's myth

If your dot matrix printer is smudging when it prints out on envelopes or labels, it's not unavoidable! You can probably stop it, or at least minimise it, by adjusting the impression control inside the printer.

Lift the black plastic cover off the printer and on the right hand side you'll see a coloured plastic arrow and a black plastic scale. Move the scale to a different setting and the smudging should be less noticeable.

Desert Island Tipoffs

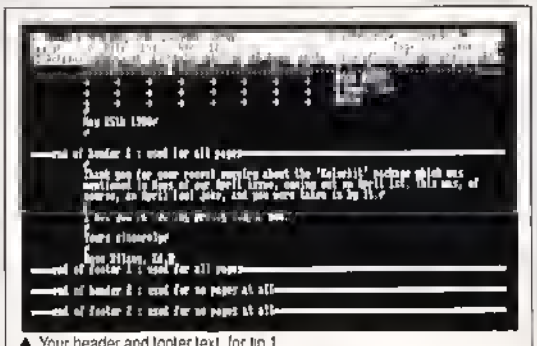
As the ship goes down, you only have time to grab your PCW, a 240V generator, several hundred bottles and your systems disc. Which eight tips would be most useful for your LocoScripted messages? Here's another selection of classics:

1) You can mail merge simple letters without LocoMail. The trick is to put the 'letterhead' in the header, the content of the letter in the footer, and then make each page in the document contain only the recipient's address and the 'Dear' line. You just have as many pages as recipients; of course this only works for one page letters!

Get into the header and footer by pressing [f1] ([f7] in LocoScript 1) then [ENTER] and then put your letterhead in header 1 and the text of the letter in footer 1. [EXIT] [ENTER] takes you back to the main document, where you put one name, address and 'Dear Fred' to each page (end a page with [ALT] [RETURN]). You'll need to set the footer zone as 'floating' in Loco 2; while editing the header, press f5 'Pages' and select 'Page layout'.

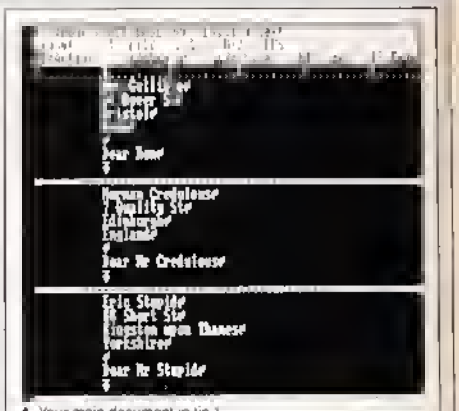
In Loco 1, while editing the header, press f7 twice to get to the 'page size' menu. If using A4 paper (70 lines) you'll need a page body of around eight lines to accommodate the names and addresses plus the 'Dear Fred' line. This would mean you'd set the headers zone to say 9 and the footer zone to 53 starting at position 18. Pick the 'all pages same' option from the pagination menu.

2) The neatest way to draw a line across the page in LocoScript is by the sequence ⊡UL⊡RA⊡UL which turns underline on, jumps across to the right margin, then turns underline off. If you try to underline with a number of '_' characters ([SHIFT] plus a hyphen) on an 8000 machine the resulting line won't be continuous.



▲ Your header and footer text for tip 1

3) Probably the best way to store names and addresses on file in LocoScript is to make each one a separate document and keep them all in a separate group. That way you can name each file after the person whose address it contains, and all the names will be displayed in alphabetical order by LocoScript's disc manager screen.



▲ Your main document in tip 1

4) Unless you want to be able to print out a list of telephone numbers, put the telephone number of the name-and-address document in the 'identify' text. The number won't find its way onto envelopes when you print addresses, or into letters when you insert the address, but it'll always be available for lookup purposes, without needing to edit the document.

To edit or view the identity text in LocoScript 2, press [f5] taking 'Inspect document'. In LocoScript 1, press [f7] 'Modes' in edit mode and select 'Edit identify text'. To view, press [f2] in the disc manager.

5) If you make the margins of each name-and-address document at 30, they'll be correctly positioned for printing out on envelopes. But when you put them into letters ('Insert text' is in [f1] in Loco 2 and [f7] in Loco 1) only the text will be inserted, and will stick to the margins of your letter. The thing to do then is to put the left margin in the template of your addresses group to 30, then all your address files will have the margins already set.

6) If you want all the letters in your LETTERS group catalogued by date, give them names like 0621ERIC.INV with the month followed by the day (remember the 0 or it won't sort properly).

7) Make a phrases file called LETTERS with your standard phrases – 'Yours sincerely [RETURN] [RETURN] Fred Bloggs' etc. – under suitable letters. (Phrases are described in more detail in the 'Play School' article on page 27).

8) Any file called TEMPLATE.STD on your startup disc will be copied onto the same group on drive M when LocoScript starts up. So, if you use one of these templates as your diary/memo pad, you always have it available in the memory, even after disc changes. You can add urgent things to do, check up on forthcoming appointments, etc., and if you copy the file back to the startup disc before you switch off and go to bed, it'll be updated for the next day.

These pages provide a comprehensive guide to the Amstrad PCW software. Published in three monthly parts, this time it's the turn of Word Processors (including Desk Top Publishers), Accounts/ Payroll packages and Utilities. We've set out to cover every important piece of software we could lay our hands on, and to give you enough information to decide whether they are suitable for you.

All software will run on both the 9512 and the 8000 series machines, though the former's daisywheel printer cannot print graphical output.

The selection isn't comprehensive, but the software listed here represents what we think is the best of that currently available.

As well as a brief summary of what they do, the main Plus and Minus points for each program are listed – Pluses have a □ by them, Minuses a ■. Those we think are particularly noteworthy have a corner flash. Have fun window shopping!

WORD PROCESSORS

LocoScript already comes bundled with its own word processor, so you might not think of buying another one as a priority. In fact, whatever you may have read in some magazines, LocoScript is a pretty good wordprocessor and you won't find many editing and layout functions it doesn't have. Its principal disadvantage was its slowness, but the release of LocoScript 2 has lessened that.

There are advantages to be had in changing. LocoScript cannot run from CP/M, and this may cause you trouble.

Many other word processors have a built-in 'mailmerger' program. This is a way of doing bulk mailshots; you store your address list in a data file, and write a letter with labelled gaps where you want the names and addresses to go. Then, when you print, the letter comes out once for each address, with the information in its correct place. Also, you often get a spelling checker thrown in free – look for one which allows its dictionary to be modified so you can include non-American spellings.

One thing's for sure, whatever word processor you buy it will be totally different to operate from LocoScript. The PCW keyboard is custom built to run it, and if you change you may have to get used to some arcane choices of keys to do even simple operations. Also, you won't be able (very easily) to use all the printer styles that you can in LocoScript, though there will be enough to get by with.

LocoScript 2 — *Essential purchase*

£19.95 • Locomotive Software • 0306 740606

As bundled with new 9512, the new version of everyone's first word processor. If you know how LocoScript 1 works, you'll have minimal relearning to do, and it puts right (almost) all the defects of the old version at a rock bottom price. Greek and Cyrillic alphabets, and Version 2.12 even lets you define up to sixteen characters of your own design.

PLUSES • MINUSES

- □ 'Find page' command makes moving around faster
- □ Superb range of foreign accents and symbols available
- □ Can now drive daisywheel and other printers
- □ Has DISCKIT's formatting and copying built into it
- □ New 300-page manual
- ■ Mailmerger and spelling checker not included
- ■ Inconvenient for regular CP/M users
- ■ Still no word counter!
- ■ Still slow at Find, Exchange and scrolling

LocoMail — *Best buy!*

£29.95 • Locomotive/Amsoft • 0306 740606

As a mailmerger for LocoScript, it's difficult to see how anything could be better than this. It runs directly from LocoScript, and can process any LocoScript commands. Has many advanced features and is highly recommended for all LocoScript users.

PLUSES • MINUSES

- □ You don't have to run it from CP/M
- □ Can print any LocoScript text formatting commands
- □ Can automatically justify paragraphs after insertion
- □ Can insert numeric calculations into letters
- □ Can read data from non-LocoScript (ie. ASCII) files
- □ Large manual, with example files on disc
- ■ No way to sort and filter addresses before a print run

LocoSpell — *A must for LocoScripters!*

£19.95 • Locomotive/Amsoft • 0306 740606

The ultimate spelling checker for LocoScript users. It is run as a simple menu choice while you are editing a document normally, and you can check either an entire document or only a paragraph. When it finds an error, it suggests a correction. Reasonably fast, given LocoScript's inherent sloth.

PLUSES • MINUSES

- □ Runs totally from within LocoScript
- □ Can do small sections of a file
- □ Suggests alternatives for misspelt words
- □ Reformats the text as it makes corrections
- □ Provides the much-missed LocoScript word counter
- ■ Can't remove spellings you don't like (eg -ize) from dictionary
- ■ The manual gets bogged down sometimes
- ■ Slow at scrolling the dictionary window

Pocket Protext/Protext — *Best CP/M wp*

£39.95/£59.95 • Arnor • 0733 239011

The best CP/M wordprocessor. Very fast at moving around large files, and packed with features. Works with key combinations rather than menus, but uses LocoScript keys too. Comes complete with a good spelling checker, a lightning fast word counter and a very powerful mailmerger. 'Pocket Protext' is a stripped down version – essentially the same word processing features, but no spell checker or mail merger, and lacking one or two incidental facilities like two column printing. Specify which machine you have when buying.

PLUSES • MINUSES

- □ Complete with spelling checker/word counter
- □ Packed with features, eg. calculate facility, text editor for writing programs, 'print to screen' option etc.
- □ Lets you work with two documents at once
- □ You can do all of CP/M's functions without ever leaving the word processor
- □ Very fast at moving around, doing exchanges and so on
- □ Extremely powerful and flexible mailmerger is almost a word processing programming language in its own right
- ■ Forces you to learn another new set of control keys to use it
- ■ Printing labels is virtually impossible
- ■ Not as slick as LocoScript in its printer controls

Qmail
Great value!
£29.95 • Proteus Computing • 01-748 2302

A mail merger specifically designed to work with LocoScript files. It scores over LocoMail in that it has a simple but effective database system to allow you to choose your target for a mailshot by marking them with 'attributes' and selecting – eg, only those customers who bought your product X.

PLUSES › MINUSES

- Reads LocoScript files and prints all LocoScript commands
- Well-designed database is ideal for mailmerging
- Database 'attributes' provide advanced selection capability
- Manual is lacking in examples
- No numeric calculation capability
- Doesn't read non-LocoScript files

Prospell
£29.95 • Arnor • 0733 239011

A stand-alone spell checker for use with almost any wordprocessor that runs on the PCWs. Reads LocoScript, WordStar and ASCII files, and allows you to make corrections directly, view the context, change the dictionary etc. Specify which machine when buying.

PLUSES › MINUSES

- Checks LocoScript and WordStar documents directly
- Displays the context of a suspect word
- Can edit misspellings directly from Prospell
- Anagram and crossword solvers too
- Processes files of 15k or more in sections

Mini Office
£29.95 • Database • 0625 878888

The word processor module of this five-program package is very fast, with a lightning word counter, but suffers from a mess of bugs in file savings and printing (and proportionally spaced justified print takes ages) ; it's no rival to LocoScript or Protext.

PLUSES › MINUSES

- Very fast
- Currently riddled with bugs in printing, file handling, etc.

TempDisc
£11.95 • Thurston Brown • 0395 68385

A set of ready-made TEMPLATE.STDs made up of fancy patterns of exotic characters for you to embellish and use with LocoScript. Essentially for social/personal business use. You could win £10 from the suppliers by designing your own!

PLUSES › MINUSES

- Using it tells you a lot about the intricacies of LocoScript
- You can achieve professional results without reading too much of the LocoScript manual
- You could write you own templates for free by reading the LocoScript manual

Easy Labeller
£34.44 • M.A.S.S. • 0603 630768

Labelling program which stores your names and address list and will print out in label format selected items from it.

PLUSES › MINUSES

- Useful options like printing out current date
- Good search facilities
- Range of printing options will fit most stationery
- Data needs an entire disc to itself
- Data entry is slowed by returning to main menu between labels

Label Printer
£25.00 • Microdraw • 0622 685481

Very similar program to Easy Labeller in not quite as powerful. Usual features of a labeller and you can store comments with each label's data.

PLUSES › MINUSES

- Menus simple – easy to get the program going
- Fast data entry
- Can store comments with each entry
- No import or export of data
- Data needs an entire disc to itself

Pocket WordStar
It's Wordstar!
£49.95 • MicroPro/Davis Rubin • 0386 853610

For many business users, word processing means WordStar. Almost everything you could need in a text processor is here and despite the title this 'Pocket' version has all the features of the original. Efficient and proven, but now showing its age and there are alternatives unless you are committed to WordStar already. £20 extra buys the De Luxe version with spell checker.

PLUSES › MINUSES

- Probably the world's most widely used word-processor
- Documentation is complex but well structured
- Includes a mail merge utility
- Keystroke commands fully described on on-screen menus
- You can save your own favourite customised version
- Doesn't make full use of the PCW keyboard and printer
- Page and margin formatting commands are awkward to use

AnsibleIndeX
Author's best buy!
£49.50 • Ansible Information • 0672 62576

Takes a LocoScript file and compiles an alphabetical index with page numbers from all the words marked. You mark the words to be indexed by using LocoScript's (+RV) code. The price includes the AnsibleCheck word counter /proof reader program too, which is also available separately at £19.50.

PLUSES › MINUSES

- LocoScript documents don't have to be converted to ASCII
- Can 'invert' phrases, eg 'Smith, Fred' or 'Fred Smith'
- Can produce a single index over several different files
- The output index is not a LocoScript document until you convert it
- Can only index words appearing literally, not general topics

NewWord
Powerful and proven!
£69.00 • NewStar Software • 0277 220573

NewWord sets out to exploit the WordStar market by doing the same job better. It uses much the same key commands as WordStar and will even edit documents prepared under WordStar. Comes with a spelling checker, and the on-screen help is better than WordStar's, though the keystrokes are still as obscure.

PLUSES › MINUSES

- Does everything WordStar does, even reads files from WordStar
- Spelling checker included
- Can un-erase words and lines
- Onscreen help better than WordStar's
- Full reformatting of text within mailmerger
- Weak on use of keypad and printer support
- Many of WordStar's disadvantages such as formatting troubles and obscure commands

ACCOUNTS • PAYROLL

Sage Accounts
Best general system
£100.05 • Sagesoft • 091-284 7077

An integrated accounts package consisting of purchase, sales and nominal ledgers. For another £50 you can buy Accounts Plus which also has invoicing and stock control. The package is aimed at small companies with the emphasis on ease of setting up. But there are a number of limitations — in particular the package cannot cope too easily with rapidly increasing numbers of customers and suppliers.

PLUSES › MINUSES

- Clean, tidy and logical screen layouts and menus
- Easy to set up and use with excellent documentation
- Good audit trails and VAT reports
- Can produce formatted trial balances
- Restrictive account numbering system
- Only single Nominal ledger and VAT analysis per item
- Does not cater for settlement discounts
- Won't print remittance advice slips
- Prints out in 17 pitch, which is cramped on 9512 printer – need 17 pitch daisywheel
- Lots of disc swapping necessary.
- Can be slow to use — it runs in Mallard Basic.
- A couple of mildly annoying quirks in cash allocation routine and account code system.

Digita Business Controller
£99.95 • Digita International • 0395 45059

Not a full accounting system, but a very easy-to-use package with an excellent manual. Nominal ledger already set up and you can be up and running in minutes. No aged creditor/debtor lists can be produced, and problems with VAT handling mean it's not really for VAT registered businesses. For other small business though it's very good value.

PLUSES › MINUSES

- Delight to use with a very good manual
- You can get the system working in minutes
- Financial ratios can be included in reports
- VAT handling very cumbersome, suit non-VAT registered business
- No facility for producing aged debtors/creditors list

Compact Accounts
Versatile
£199.99 • Compact Software Ltd • 0703 611214

Another very large integrated package supplied on several discs and consisting of sales, purchase and nominal ledger together with invoicing. The package is available on much larger micros, and since the format in which data is produced is the same as on PCWs, the system is particularly suitable for users planning to upgrade their hardware at a later date.

PLUSES › MINUSES

- Audit trails are an auditor's dream.
- Includes a facility to allow data to be used in WordStar, Multiplan or SuperCalc 2
- Superb prepayment facility.
- Can run a number of companies separately.
- Easily transported to bigger computers

M.A.P. Accounts
Powerful!
£149.95 • MAP Systems • 061-624 5662/3

This is a very powerful package moved onto the PCW at a fraction of its cost on larger micros. The size makes it a little cumbersome to use, but apart from that there are very few significant problems. The integrated suite includes the same five modules as Camsell, but they are supplied on four sides of disc, making it effectively impossible for the software to be run as an integrated system on an unexpanded 8256.

PLUSES › MINUSES

- A very comprehensive and professional package
- Very good audit trails.
- It's possible to run the sales and purchase ledgers over a different time period from the nominal.
- Facility for handling prepayments and accruals
- Able to print full management accounts.
- The size of the programs means lots of disc swapping
- All nermal responses need to be in upper case.

Cornix Simple Accounts
Easy to use
£49.95 • Cornix • 0462 682989

Simple cash book style package which allows you to keep track of debtors and creditors (though not aged ones). Simple to use and you can make changes if you make a mistake. Slow to use for complex operations and number of entries in given period is limited, but very good simple program for small businesses.

PLUSES › MINUSES

- Simple, easy-to-use program
- Can correct errors
- Keeps track of debtors and creditors
- Slow for complex operations
- Ability to alter figures won't please accounting purists

Anagram Accounts
£86.25 • Anagram Systems • 0403 59551

Sophisticated package for users familiar with accounts. Small details like discounts and VAT are handled well but no permanent records are kept on disc and you have to use the extensive report printing options.

PLUSES › MINUSES

- Invoice printing is easy
- Handles customer details efficiently
- Key presses are rather obscure
- Best to have some idea of accounts before using it

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In ivory with green piping. 3 piece set

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ACCOUNTS • PAYROLL • UTILITIES

Camsoft PSIL — Good for small company
£149.95 • Cambrian Software • 0766 831878

Consists of five integrated packages: Sales, purchase and nominal ledgers, invoicing and stock control. In terms of sophistication it falls somewhere between the Sagesoft package and the larger systems from MAP and Compact. But it's easier to run than the larger packages since all the software can be squeezed into the M drive. Good package for a small company

PLUSES • MINUSES

- Comes installed for PCWs and can be run efficiently by 8256 or 8512.
- No need for pre-printed stationery.
- Excellent sort and search facilities.
- Invoices shown on screen as you create them
- Constant need to input full five-digit account codes
- No final accounts reports available on nominal ledger
- No facility to run the ledgers in different accounting periods.

Cavalier Install
£99.95 • Load & Run • 0322 72116/73128

A comprehensive integrated package. Comprises 'Inlact' accounts and 'Instock' stock control, available separately for £59.95 each. Well designed, easy to run and powerful enough for most businesses.

PLUSES • MINUSES

- Other packages (eg. 'Teleadd' address book) can be added too
- Comprehensive range of features when used as a package.
- Sophisticated features in Instock section covering pricing and order suggestion.
- Flexible accounts, traps most mistakes and gives useful report summaries
- Interesting forward planning facility in stock control
- Manual gives you a confusing number of options

Sandpiper Accounts
£149.95 • Sandpiper Software • 0978 358832

This package is described as a 'simplified' integrated system and is aimed at inexperienced users. But although it offers a large number of features at a competitive price, it suffers from some serious drawbacks. In particular the limited audit and enquiry facilities may well make it unsuitable for many businesses.

PLUSES • MINUSES

- Comes ready installed to run from the M drive.
- Price includes three months' telephone support.
- Very poor audit trails
- Lack of detail on nominal ledger
- Analysis of sales and purchases very slow
- It would be easy to wipe off transactions by accident mid month.
- The documentation is confusing.
- You have to telephone to find out your pass number before you can use the package

MAP Payroll — Good value!
£49.00 • MAP Systems • 061-624 5662

PLUSES • MINUSES

- Can amend and re-run at any stage (even after printing payslips)
- Cash analysis is broken down into departments
- System prevents re-use or amendment of leavers
- Facility to hold up to 40 standard hourly and weekly wage rates
- No SSP calculation facility (although there is provision to record amounts paid)
- Programs necessitate a lot of disc swapping
- Automatic amendment of tax code changes does not print a record of alterations made

Camsoft Payroll — Simple and flexible
£49.95 • Cambrian Software • 0766 831878

PLUSES • MINUSES

- Full payslip displayed on screen and any item can be amended immediately – when accepted the payslip is printed at once with an optional file copy
- Facility for freehand narrative on any payslip
- Uses M drive for programs to speed operation
- Built in on-screen help facility
- Search/sort routine for output to screen, printer or disc
- Uses alphanumeric employee codes
- Screen menus a bit untidy and sometimes difficult to follow
- No listing of cheques

Sagesoft Popular Payroll
£69.95 • Sagesoft • 091-284 7077

PLUSES • MINUSES

- Any or all employees payroll can be rerun at any stage up to final update
- Full pay history available for all employees and leavers
- Calculates average pay for holidays etc
- Very easy to install
- Limited number of additions/deductions
- Doesn't print a list of cheques
- No analysis of additions/deductions

Compact Payroll
£99.95 • Compact Software Ltd • 0306 887373

PLUSES • MINUSES

- Supplied with test data
- Facility to change employees tax codes following budget
- Can run payroll for several companies
- Program available for PC compatibles – data is transportable
- Must be run from the master discs
- Needs use of data input form and calculation of a check digit for each employee processed
- Once payslips are printed nothing can be changed
- Most expensive payroll program

Sandpiper Payroll
£79.95 • Sandpiper Software • 0978 355333

PLUSES • MINUSES

- Uses M drive to speed operation.
- Comprehensive SSP records.
- Cash analysis broken down into departments.
- Gives on screen review of payslips and allows amendments after payslips have been printed
- Can only process one department at a time.
- Complicated installation and software protection procedures.
- Slow cursor movement and bad positioning while entering
- Documentation not very thorough

UTILITIES

Mouse and Desktop — Useful!
£79.95 • AMS • 0925 413501

A whole new way of using your PCW – banish CP/M for ever. For your money you get a mouse and software which emulates the GEM Desktop environment found on PCs. All commands are given by pointing to icons on the screen, not typing at the keyboard. You also get calculator/calendar (etc) utilities thrown in.

PLUSES • MINUSES

- A genuinely useful desktop organiser, with well thought out utilities
- Well presented and easy to use
- Makes CP/M commands easy
- The mouse can be used with a variety of other software
- Takes up a lot of space in the M drive
- Calculator and other utilities not available while running other programs
- Can be irritating if you are proficient with CP/M

SuperType II — Useful and fun!
£24.95 • Digita International • 03954 5059

A program for users of LocoScript (1 or 2) and CP/M programs, which modifies the fonts (ie. the look of the characters) used by the PCW printer. SuperType has 4 'business' fonts and 4 'novelty' fonts, like Olde English. It works by directly altering the relevant files for LocoScript or CP/M, so you only need run it once – after that, the new chosen font is automatically available.

PLUSES • MINUSES

- Once installed, you can totally forget it's there
- Genuinely useful range of fonts available
- Works with LocoScript as well as CP/M
- All LocoScript's print size and style options still work with SuperType
- Doesn't take up any extra disc space
- You can't mix different fonts in the same document

Point of Sale
£194.35 • Avon Computers • 0761 70543

For Sages only. This program turns your PCW into a 'till-cum-stock controller – you enter each sale as it happens and at the end of the day your PCW gives you sales reports, stock details and suggested purchase orders

PLUSES • MINUSES

- Good method of stock control for small businesses
- Ties up with many double entry accounts packages
- No on screen prompts for accounts numbers
- No out of stock warning during sales
- Time taken to print out invoices could be inconvenient

Money Manager Plus — Best buy!
£39.95 • Connect Systems Ltd • 01-743 9792

The souped-up version of the personal accounts package Money Manager which would serve a small business quite nicely. It acts as a daily diary, over 12 months, recording all incomings and outgoings between up to 9 accounts. Similar transactions can be grouped together and simple reports can be printed. Money Manager also available for £24.95.

- Simple to use, requiring no accounts or computer knowledge
- Standing orders can be defined for each month
- Detailed and summary statements can be printed out
- VAT reports can be separated out
- Can present results as bar charts
- No audit trail integrity
- The statement format is not very flexible
- Transfers between accounts are not cross-referenced

Personal Tax Planner — Money saver!
£24.95 • Digita International • 03954 5059

Simple program which asks you all the questions relevant to your year's tax affairs, and prepares your tax return claim (or bill). Useful to find out whether married couples would be better assessed separately or not, for example. Annual updates available.

PLUSES • MINUSES

- Simple to use
- Needs a minimum knowledge of the tax law
- Forces you to keep your tax details in one place
- Limited application – you might only use the program once a year
- Can't handle unusual cases
- Program updates (for a new allowance level) cost £10

The Knife Plus — Vital tool
£19.95 • Hisoft • 0525 718181

An essential tool for retrieving data from corrupted discs. Knife Plus will copy all uncorrupted sectors on to a fresh disc which you can then patch up without risking the original.

PLUSES • MINUSES

- Copies all uncorrupted data from damaged disc
- If boot sector damaged, will copy good boot sector onto disc.
- Requires some knowledge of basic disc structure
- Manual not written for beginners

Wise One — For intelligent PCWs!
£34.95 • Swallowsoft

An expert system – you input rules and information and Wise One becomes an 'intelligent' program which can, for example, do simple diagnoses according to symptoms you type in. A powerful program, though you'll need a programmer's instinct.

PLUSES • MINUSES

- Power to be genuinely useful
- Elementary arithmetic
- Help screens can be set up for the user
- Obscure way of writing rules
- Manual dry and academic

THE GOOD SOFTWARE FILE

UTILITIES • DESKTOP PUBLISHING

Signwriter
£49.95 • Wight Scientific • 01-858 2699

Prints out any string of text as a sign in a standard Roman font. Only limit on size of characters is the size of the paper and the quality is very good. Long messages can be printed lengthways on continuous paper. Extra fonts are available for £5.

PLUSES • MINUSES

- Good quality print – difficult to believe it's dot matrix
- No limit on size of characters
- Text can be boxed and underlined
- Signs take several minutes to print out
- You have to pay for extra fonts

Tas-Sign
£29.95 • Tasman Software • 0532 438301

Takes time to print out but you can print signs of up to five lines of text up to seven inches high with up to 32 characters in each. Four fonts, eight hatching patterns, and you can print lengthways on continuous paper for long signs.

PLUSES • MINUSES

- Wide range of fonts and shadings
- Long signs will print out in 'landscape' (sideways) format
- Long signs take time
- Some symbols (yen signs etc) won't print out on PCW

Disc Mate
£24.99 • Siren Software • 061 848 9233

Disc Mate is a set of CP/M utility programs which bring complex disc recovery operations within the scope of CP/M novices. Facilities include recovering erased files and making files "read only" (i.e. unerasable).

PLUSES • MINUSES

- Simple on-screen instructions once you've got started
- Allows easy recovery of accidentally erased files
- "ZtPDISC" program speeds up disc access by 10 to 20%
- Friendly file copying program in case you dislike PIP
- Can read both single and double density discs
- You'll need to understand CPIM basics

Astrocalc
£15.50 • Asirocalc • 0442 51809

A starter program for astrologers. More sophisticated programs to help the interpretation of the charts are also available.

PLUSES • MINUSES

- Takes the sweat out of creating natal charts
- Genuine astrological tool – not just a fake horoscope
- No graphical representation of the charts
- Tutorial section rather pointless

Jeeves with Kempston Mouse
£79.95 • Kempston • 0908 690018

A "desktop organiser" which lets you do the mundane functions of copying, deleting files etc. by icons and pointers – you use the mouse to move a pointer over the symbol for 'delete' such as a dustbin and then click a button on the mouse. Also has built in calendar, clock, calculator, etc.

PLUSES • MINUSES

- Avoids a lot of dreaded CP/M commands
- Continuous time display.
- Works from within SuperCalc, BASIC, dBase, WordStar, Cracker, Sage Accounts
- Problems when you try to run it with just about everything else
- Calculator, watch, notepad and calendar will cost you £5

Write Hand Man
£29.95 • Hisoft • 0525 718181

This utility program sits in the background whatever you are doing – for example, if you are word processing, press the key and up pops a calculator, a notepad, or a diary. Designed to eliminate paper, but the more advanced functions (notepad) are so cumbersome they fail to be at all useful. Better to buy a £4.95 Casio calculator and a pencil & paper.

PLUSES • MINUSES

- Results from calculator can be 'pasted' directly into files
- You can re-define the PCW keys to produce strings
- Manual is technical and incomprehensible
- Notepad functions are slow and cumbersome to use
- Takes up a lot of disc space and CP/M workspace

BrainStorm
£49.95 • Caxton Software • 01-379 6502

An "ideas processor", BrainStorm is a computerised doodling pad. You can jot phrases down randomly, then organise them into a hierarchical plan, then expand each phrase into a finished idea, and finally print them out as a coherent document. If you find it easier to work at a keyboard than with a pencil and paper, this will really help you think.

PLUSES • MINUSES

- No limit to the number of sub-levels of headings and sections you can have
- You can output the rough text, for a wordprocessor to knock into shape
- Good documentation, and some neat ideas for applications
- Provides a unique service, which should be useful to you
- Needs better graphics to let you browse the structure easily
- Command keystrokes are unnatural, eg cursors don't work – you need SETKEYS
- As a word processor, it is very primitive
- A notepad and a pencil would cost you £1 or less

Stop Press
Best for design
£49.95 • AMS • 0925 413501

An excellent DTP package, very strong on graphics, very well designed, and once you get used to it, easy to use. Sophisticated text handling features such as autoflow, but you can't edit text – that all has to be done in your word processor before flowing the text in. A lot of good fonts supplied too.

PLUSES • MINUSES

- Excellent graphics facilities, good as any graphics program
- Wide range of text styles
- Menu and key commands system suits beginner and expert
- Text autoflow
- No text editing ability
- Some quirks in text handling – apostrophes, spacing etc.

Newsdesk International
£49.95 • The Electric Studio • 0462 675666

Versatile package with a very wide range of graphics facilities and high quality headline text. Page make-up is flexible, though the program can be a bit cumbersome and slow, especially in text handling. Includes all the facilities of Electric Studio's 'Art' graphics package.

PLUSES • MINUSES

- Good control over the elements on the page
- Powerful graphics facilities
- Good quality print in headlines and large fonts
- Can use font editor to create your own high quality fonts
- Text handling slow and cumbersome
- Not easy to undo mistakes
- Menus can be confusing

Fleet Street Editor Plus
£69.95 • Mirrorsoft • 01-377 4645

A versatile and powerful package. You can create template-like 'page dummies' if your publication has several pages of the same format and handling of text, setting of margins and size of text boxes etc, is well controlled. Tends to stop working abruptly for no reason though and uses memory space extravagantly.

PLUSES • MINUSES

- Versatile integrated package
- Text handling sophisticated and controlled
- Can edit text from keyboard
- Crashes occasionally
- Odd use of memory in text editor

Fleet Street Font Editor
£19.95 • Mirrorsoft • 01-377 4645

An add-on to Fleet Street Editor plus. You can design your own fonts or symbols and there are five more fonts you can use in FSE+. There's also a selection of useful extra graphics.

PLUSES • MINUSES

- Designing your own fonts is fun and easy
- Extra graphics will be useful
- You're paying twenty quid for something the other DTP programs have built-in for free
- Maximum of five fonts in FSE mean when adding a new font to your FSE disc one of the others has to go
- Not much for your money

DESKTOP PUBLISHING

Desktop publishing – or DTP – packages enable you to produce your own newsletters using your PCW. They come with a variety of fonts of a range of sizes for headlines and body text and a selection of 'clip art' graphics you can include in your creations (pictures of various objects and fancy heading boxes such as 'For Sale' or 'Stop Press').

You read in your articles prepared by a word processor into text boxes. If you can't edit the text from within the program, you have to go back to your word processor to fine-tune the article to fit – this is very tedious. Then you put your graphics in graphics boxes, make up your headlines, and then lay out your publication on the PCW by juggling the position of your boxes on each page. Finally you can get a copy of each page on your printer (though not if it's a daisywheel, of course, as on the 9512) and photocopy the results.

Your graphics can be taken either from the package itself or from TV or real life via a video digitiser.

The end results won't be of sufficient quality to compete with the professionals, but for club and company newsletters, leaflets, posters and small-scale publications, DTP packages could be invaluable.

The Desktop Publisher
Great value!
£29.95 • Database Software • 061-480 0171

A tremendous value for money package. Graphics and text boxes can be easily moved around and page layout is clear. You can edit text from within the program, using LocoScript-like commands to set bold and italics. Good range of fonts and graphics too – all at half the price of its rivals! Mouse optional for £50 more.

PLUSES • MINUSES

- Text editor allows you to edit articles to fit the space easily
- Boxes and general layout easy to manipulate
- Works with three mice, but fine with keyboard alone
- Half the price of other packages
- Good range of fonts and graphics, and you can design your own fonts using the font editor
- Text boxes always expand if incoming text is too long – you can't fix their size beforehand
- Headlines can look a bit jagged

NEXT MONTH

The guide continues with DATABASES, COMMUNICATIONS, EDUCATIONAL PACKAGES and PROGRAMMING. After that it's SPREADSHEETS, GRAPHICS and GAMES and the month after *that* it's back to this month's categories.

Our intention is to keep publishing the three parts of the guide in rotation, updating it each month to include all new products. If you would like to see other sections of the guide, back issues of 8000 Plus are available from our Somerton address at £1.75 each.

Meanwhile, if you are aware of any significant errors or omissions in the File as published, please let us know. We want to maintain it as THE authoritative guide to PCW software.

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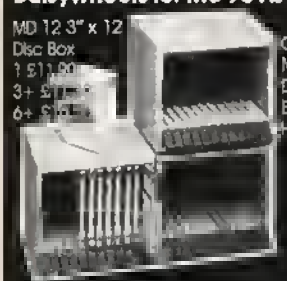

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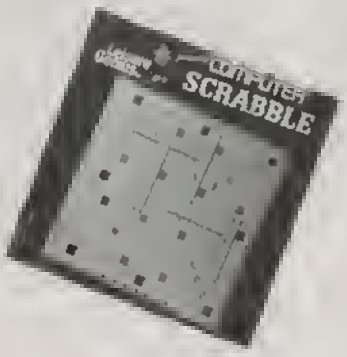

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9512 software:
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Tau Ceti; Head Over Heels

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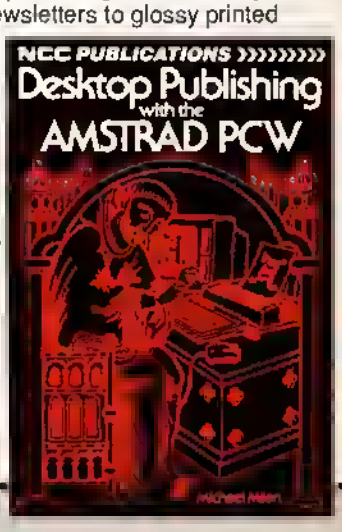

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POST SCRIPT

A welter of wit, wisdom and woe waded through by a world-weary Ed.

Another four pages of comment and controversy. Subjects under discussion includa Mini Office, Mandarin Chinese, Music and Middlesex. If you want to add to your angle to an argument , ask for advice about Amstrads, or anything, write to *PostScript, 8000 Plus, 4 Queen St, Bath, BA1 1EJ.* Wa wish wa had time to reply personally to everyone, but the next deadline is looming already...

Mini Office: The Case Against

After reading the review of the Mini Office Professional program in the January issue of 8000 Plus. I was suitably impressed by what you said about its greatness to actually buy one. I hoped it would liven things up with the PCW, and it did, but not in the way I expected.

I thought I'd work through the manual (if that's what you can call it), which meant starting with the word processor. What an appalling mostrosity it is. It comes nowhere near Locoscript 1 or 2, despite its claimed speed. In fact, I never wrote a long enough piece of text to put this to the test. What I found awful was the printout quality, the ways of saving files to disc and management of the page layout. Or rather mis-management of the page layout.

It can't print justified text onto paper without making a complete mess of the sheet, and doesn't seem to be able to cope with single sheets of A4 paper. Even when you set the 'paper type' option to single it still wants to print 66 lines to the page, starting at least 8 down. Word processors are meant to make text look nice, which means printing it on A4 paper, preferably in PS. This one falls abysmally on both counts. Even the extras like double height are rather a let down when one actually sees it in the flesh.

The database has some nice touches, but again there are difficulties saving files, and printing them out. When I save large amounts of data, I often get a message 'Error in CP/M – failed to save file', which causes rather a shock.

With all parts of the program problems occur not only with the printout, but with management of the files on the disc. It is difficult to know, firstly, how to save a graph and secondly how to clear the screen so that a new graph can be displayed without having to run the graph program again.

The basic problems, it seems, are with printing files, saving files and organising discs. Editing one file and adding data to it is a nightmare, except with the database. In fact, if you printed an alternative manual/guide, you could make quite a killing.

How you decide the 'value verdicts' in your reviews? Is it the price that is of key importance? I suggest you have another rating included in this end section, such as how well the program achieves what it sets out to do. MOP word processor, it I were the judge, would get 0 if it was lucky, and –1 or –2 if it wasn't.

MOP is over-rated by you, needs lots and lots of explanations, and potential buyers of the program should be warned it can be very frustrating to say the least.

Nicholas Leach
Watsall

Like so many other people I was delighted when Mini Office Professional was made available for the PCW.

However, its usefulness to me has been reduced by the poor quality of the manual, a point recognised by your own and many other reviews.

I may be a bit thick, but I am unable to create a named file when using the graphics package, except by accident. Furthermore, once I create say, a pie-chart and label it as I want, I seem unable to save this, for subsequent use. Could you help me with this or point me to a book about Mini Office that would unlock its potential for me and I suspect many others.

Colin Foster
Leeds

"WHEN I FIND OUT HOW TO SAVE GRAPHICS - THEN I'LL STOP DRAWING ON THE WALLS"

When Mini Office arrived I was slightly bemused by the size and quality of the manual, to say nothing of the minute print inside, but thought to myself "oh well, what do you expect for twenty five quid?"

Following my normal practice I loaded the MOP programs into the M disc, put an empty disk for data into the A drive and began, or rather didn't. MOP won't run from the M disc, it has to have its issue disk (or a copy) in drive A: to either enter or exit any of the modules. "Oh well", I thought "What do you expect for twenty-five quid"

I then decided I might as well save what I had done, in ASCII format of course. MOP promptly refused to give my CBASIC listing (in which I couldn't get a \ by the way) the .BAS file ending. "Oh well etc"...

At this point I decided to finish the session, so I unloaded the MOP software, and tried to copy the file that I had created into memory so I could move it to another disk. "That's funny", I thought. "PIP has stopped working". A quick directory list of the M drive showed why PIP had stopped working. MOP had decided to '***' all over my memory, corrupting everything stored there.

What do I expect for twenty-five quid? A lot better than this, it is junk, however many features are packed into it.

Graham Griggs
Essex

Please help! After writing a telephone directory I found the field for the addresses were too small. Entering 'Alter structure', I worked back through the field to try and change the size of the green box on the card, but it refused to be changed.

It can be changed if the line entry is deleted first and then re-established, however all data in the field is also deleted. The change can also be made if all Records are Deleted All this deleting does not lose all the records as the system generates a back-up file with the same name but a postscript of BAK.

The problem is the old data cannot be imported into the modified structure because the structures do not match. How do you change the size of a field in an existing data base?

W W Richards
Sawbridgeworth

I am writing to you in desperation to enquire whether you or anyone

else has cracked the problem of establishing the correct Printer setup when word processing with Mini Office Professional and using single sheet A4 paper. I have telephoned and written to Database Software, but without satisfaction.

In simple terms the printer, and page set up and preview facility do not appear to be in synchrony. When producing a long report I have found that, for example, two lines from the top of a following page are printed at the bottom of the preceeding page after the page number within the bottom gap.

Marten Bulf
Chesterfield

I tried following J Worsley's 'Tip-off' (April issue) about using single sheets with Mini-Office Professional's Database, but on my 9512 it doesn't seem to help at all.

Arthur Wardell
Halifax

8000 PLUS: The two problems with Mini Office are i) that it is full of bugs and these vary depending on the version you have and ii) that the manual is extremely poor. Most of the problems described here – CP/M errors when you try to save a database file, lack of single-sheet printing facilities, problems saving files in the word processor, etc. are bugs. Database say these have been fixed in the latest version of Mini Office, and you can get the latest version free by returning your master discs and a covering letter. These bugs were not present on our review copy, so there was no way we could have known about them. Others were, but have also been fixed – for example, the lack of a word counter.

The difficulty with saving graphics seems to be the manual's fault. Database said all would become clear on studying the 'read me' file in the graphics package; unfortunately the manual neglects to mention that you can't TYPE this file to examine the contents, you have to go into the graphics module and load it from there. The problems with the page lengths can be resolved (they say) by setting the page length – though again the manual gives you no clues how to do this.

Bugs in new software are very frustrating but they're a fact of life. Protext had quite a few when it came out, but the current version is now arguably the best CP/M word processor around. Not much consolation, but you'll just have to be patient and return your MOP discs for the latest version if you unearth yet another 'feature'.

As for the manual, well there's a gold mine for the first person to write a reasonable book on MOP, though we know of nothing on the horizon yet. We're trying to do our bit with a tutorial series, which on present form will take us to at least 1996.

You can't change the size of field on an existing database (it would be highly unusual if you could) but the lack of import/export on the database is a bad omission. Yes, proportionally spaced justified print does take ages – it does on Protext too. LocoScript is probably cleverer than many people think. And yes, Mini Office won't work from M (or from a hard disc – let's hope that's rectified) which is frustrating but not uncommon (neither do the desktop publishing programs).

What's outrageous about basing 'value for money' ratings on price? What else do you base value for money on? Yes, we do have a section on how well the package works, called 'performance'.

With bugs fixed, MOP is still a very good package. It's just a shame about that manual.

The PCW Owners' Tale

My drives are squeaking, sounding like the geese;
Perhaps the bearings, dry and needing grease
Revolt, and scream their pain in cries most rude;
(Or maybe there's a goose who needs some food?)
Howe'er it be, I cannot bear it long
This caterwauling, mournful banshee's song
What can I do to still the dreadful sound?
Magnetic discs, my info spinning round,
The flashing LED, the shutter springing back:
Is this to be no more, a "data-lack"?
No words processing strong and green and clear
The menus closed, the screen dull, black and drear?
Oh, 8K Plus, my life holds no more fun!
O tell! Is't something dreadful that I've done?

Philip Swallow
London

After some deliberation I've
Come to the conclusion that you need a new drive.

Index wanted

Being a brand new user of a PCW 9512 I am in need of a good "Index programme" as my work consists mainly of indexing books, periodicals etc. Are there any such programs available for the PCW 9512?

Mrs Joyce Francis
Selsey

8000 PLUS: Yes, and they're free. We published some indexing programs to type in yourself in our listings pages in issue 12, page 56, and a special author's one in issue 16, page 62. Otherwise you could try 'Ansible Index', an author's indexer, advertised regularly in 8000 Plus.

Here: Comms, Everybody

At work I have an IBM compatible micro, connected to an ICL network from which I can download data (health service information) for manipulation within such packages as Supercalc 4 and SPSS. At home I have a PCW 8256 with extended memory, and I have just ordered Mini Office Professional, with its Comms package.

Is there any way in which I can connect the two systems? So that I can work on the data, or subsets of it, at home? I'd hate to have to buy the Amstrad PC, or any other, as I am really quite fond of the PCW.

Antony Grlew
Capel Dewi

8000 PLUS: The industry standard protocols for data transfer are XMODEM and KERMIT, both of which Mini Office supports, so (given a modem and RS232 interface) there's no problem downloading and sending back simple text files. The PCW is of course ideal for word-processing such files.

Your problem would be that SuperCalc 4 and SPSS won't work on PCWs, so unless you went through the tedious process of converting all your data for use on SuperCalc 2 and re-converting it for SuperCalc 4 every time you worked at home, it would easier to buy a PC.

Quickies

1.Why is golf program Leaderboard corrupted, as all dealers I ring tell me?
2. Can you tell me if there is a music software package available – either educational or composing/ writing.

T D Ashton
Newquay

8000 PLUS: Apparently there was a bug in the scoring on Leaderboard, and it's been withdrawn. We found no problems with our review copy

Your starter for ten

I'm sure I'm not alone in thinking that whoever produced the manual as supplied with their PCW 8512 which I have was, to use the current phraseology, "economical with the information". Can you answer the following questions about BASIC:

1) How can I stop the printer.
2) When I want to print out the screen I press EXTRA+PTR. Why does it print in 17 pitch double strike? No matter how I reset the PTR line to show draft quality it has no effect.
3) How can I get messages to show and stay on the bottom line of the screen like some system messages?
4) Only once have I seen a message something like "Using file A" on the bottom right of the screen. When does this happen and why?
5) DEF USR – how is this used?
6) In Appendix 11.6 there are codes for different typestyles such as condensed which is shown as SI (15). Now I know that the coding is LPRINT CHR$(15),(see your checker program), but what is the SI for and how do I use the other codes which do not have a figure in brackets. I assume that printer codes must use LPRINT and screen codes just PRINT.
7) Why do I always have to use a file reference of 1 in the OPEN and other file statements.
8) I am constantly irritated by the result of DIR which prints out in random order.
9) Where can I find out what all the key combinations do? By accident I found that ALT ENTER is the same as SHIFT LOCK and I subsequently found that it is stated so on page no-number which faces page 1 of "An introduction to LOGO". I don't think they could have found a

though.

As for the music, well we know of nothing on the market for the PCW at the moment, though rumour has it that a couple of programs to enable you to write and print out music (perhaps play it if you have a suitable musical add-on) are currently being written. Watch this space.

Aplir foor

I was fascinated by your amazing article in the April issue's News Plus, 'Technicolour PCW', tealuring Kolorsoft's Japanese manager Joki Sonyu. I showed it to an old Chinese school chum, Hu Yu Ki Ding. I don't speak Mandarin, but he was clearly impressed by the technical concept behind it. He said it was flung dung, and almost certainly had something to do with the date. But then I don't understand the Chinese calendar either...

D Jacques
Isle of Wight

Nice article on page 8 of your April issue. Shame about the name you chose for the Japanese gentleman though. *Joh ki son yu* is deeply offensive. With a downward inflection it means 'may your pineapples ever swing low' and *sumo* pig-wrestlers use it as one of their pre-fight ritual insults. Try saying it to a Japanese taxi-driver and you'll end up impaled on the end of his sword. Much depends on pronunciation and intonation of course, but be prepared for a drastic drop in you sales figures from Tokyo!

Brian H Curtis
Farnham, Surrey

8000 PLUS Hmmm. Our Japanese expert claims that a much more effective insult is to look someone straight in the eye and say 'ba-ka!' which apparently means 'you are a horse-deer', this being the worst thing you can call anyone in Japan.

Write your own programs

In July 1987 I had a bad fall off a roof, suffering a broken back and a lot of other injuries. My Amstrad has saved my sanity and I am always using it.

My BASIC is nil but I get great enjoyment from writing listings which I get from 8000 Plus. I read anything I can get on the PCW, and I would dearly wish to be able to write a program in BASIC, can you help?

G D McGuire
Enfield

Some good introductory books to writing BASIC programs are 'Program Your PCW' by Ian Sinclair (Glentop, 01 441 4130) and the Mallard BASIC book from our Special Offers page. You could also try joining a PCW user group (see these pages).

Stencil sharpener

Anthea Beckett asks in your March issue about cutting stencils on the PCW printer. Gestetner actually produce a special low-wax stencil for a dot-matrix printer: the 501s have been using them for several months without any ill effect on the print head, or indeed any special need for 'degunging'.

It may well be that other stencil manufacturers have already followed suit, or will be doing so: ask your local office supply shop.

Rev. Michael Edward
Sudbury

Take 1024 lines

On reading your March issue, I have noticed that Drive A on the PCW 8256/512 machine has yet again been retered to as a single-density drive.

This however is untrue, as both drives A and B on the PCW machines are used in double-density. Both drives A and B are formatted to use 9 sectors per track with 512 bytes per sectore double density. Drive A being 40 tracks "single sided" (9x512x40=184K), and drive B:80 tracks "Double sided" (9x512x80x2=737k).

I hope this clears up any misconceptions that some of your readers have.

Phillip Brudall
Paul Stokes
Bath

Copy catch

Is it possible to copy the master disc supplied with the PCW 9512 to run 'Locoscript 2' etc on a PCW 8256.

R Letch
Edinburgh

8000 PLUS Yes, but you'll need an 8512 as an intermediary to copy the LocoScript files from the B drive to the A drive. The 9512

"IT NEVER DID THIS BEFORE STANLEY UNWIN STARTED ADVERTISING IT..."

more obscure place to hide it.

10) Printing graphics. Appendix 11.2.3 page 124. I think I understand what is stated but still don't know how to use it. It refers to 11.8 which is anything but clear and I just do not understand how to use the codes given.

11) Why does my printer print a # as a £? (Locoscript is all right)

12) How can I test for the difference between a 'space' and a "null"?

After `INPUT "reply =";xyz$` I find that `IF xyz$=" " THEN...` and `IF xyz$= "" THEN...` give the same result. I don't want to use INKEY$ because I want more than one character on occasions.

W P Ford
Uckfield

8000 PLUS When I'm on 'Mastermind' my specialist subject will be Classical Guitar Music and not Mallard BASIC at all, but here goes.

1) Press STOP to stop the program, press PTR, move the cursor over 'RESET', press ⊡ to clear the printer buffer, then EXIT.

2) EXTRA PTR gives you a 'screen dump' – a dot-for-dot image of the screen to the printer (not 17 pitch!) so you can only get it one size.

3) In BASIC, by the line `PRINT CHR$(27)+"0"`. The line `PRINT CHR$(27)+"I"` puts things back to normal.

4) Sorry, never heard of it.

5) It's the machine code equivalent of DEF FN, which lets you define functions to use in your program such as printing to a certain position on the screen. DEF USR lets you define ten machine code routines (for example, to redefine the screen characters) which you then use with CALL. You can look at memory locations with the memory scanner in this month's listings.

6) All the printer control codes are either numbers like 15 (which you'd use by typing LPRINT CHR$(15)) or escape codes like ESC W 1 (you'd type LPRINT CHR$(27)+"W"+"1"). PRINT works only on the screen as you say.

7) It's a reference number so BASIC knows which file you're working with. For example, if you open the same file both for reading and writing (when updating it perhaps) one must be referenced as 1 and the other as 2 to have them buffered separately and prevent corruption.

8) Not much you can do about that one.

9) ALT ENTER puts you in or out of 'Caps lock' which is like shift lock but leaves numbers as normal. The other obscure key combination is ALT RELAY which puts you in or out of 'number lock' in which the cursor keys on the right give the numbers written on them and numbers remain numbers even if shifted.

10) We're doing a a tutorial feature on that soon.

11) The ASCII codes for both symbols are the same (ASCII was invented in America, where they obviously believe £ signs are obscure and unimportant). This often causes problems – I've even seen BR's monitors at Bath Spa advertising day returns to Weymouth 'for just #3.00'.

12) INPUT ignores leading spaces; use INPUT$. Try something like `xyz$=INPUT$(5)` (or any other number of letters) – the next five characters typed in (no RETURN) will be assigned to xyz$, leading spaces or not. You can continue `IF LEFT$(xyz$,1)=" " THEN...`

version of LocoScript 2 will work on an 8000 machine though apparently there are problems with the spell checking.

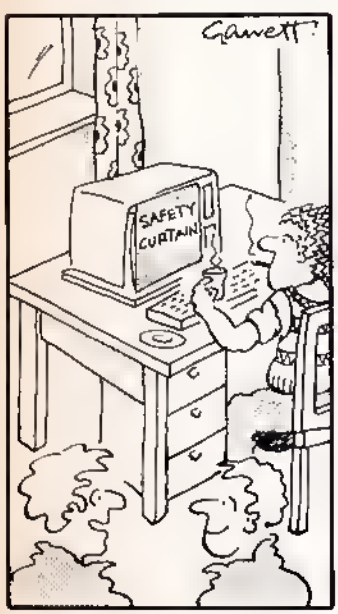
You're never too young...

With reference to your search for the youngest 8000 Plus reader – my son Denver has been reading your magazine since issue no.2, when he was 10 years old.
Keith Chaplin
Dorset

...or old

This is the second time I have written to a technical magazine - the first time was to 'Wireless World' in 1927, of which I was a regular reader for over sixty years. Your age spread of readers can now be extended a little further - I was 81 last August.
HW Medcraft
Surrey

8000 PLUS I hope you'll still be reading 8000 Plus in nineteen year's time. Reminds me of the story told about George Burns (among others). A young reporter interviewed Burns on his eightieth birthday. 'I hope I'll be interviewing you when you're a hundred,' says the reporter. 'I should think so,' Burns replies, 'you look healthy enough to me.'



"HE WRITES PLAYS..."

Here's a funny story

One of the first computers I worked with was a Farranti Pegasus (later taken over by ICL) with a massive 8K drum store. It's still my favourite – it looked like everyone's conception of a computer. A 8ft high monolith with two green eyed cathode ray tubes and more switches on the front than Concorde's flight deck. It was surrounded by bays of valves, a massive water cooled air conditioner, four huge tape decks, a monstrosity of a printer, card readers, card punch, paper tape reader and a Greed teletype printer.

Programming these machines was a nightmare of machine code. Just printing one letter involved manually coding several lines of binary numbers. This at times produced some very unusual printing during test sessions. We were developing a programme to calculate the refinery stocks of products such as the various types of oil and grades of petrol. The printout was required to display the tank number, the capacity, the type or grade of oil and the tonnage. Tank number 1287 contained a product called FUEL.OIL. The first attempt to print this produced the printout as TANK 1287 F** ORL. Whereupon the programmer commented "There's something wrong here – we shouldn't be printing out for empty tanks".
Ron Jones
Great Sutton

Protext vs LocoScript – Round 2

I was very interested to read your article in the March edition of 8000 Plus comparing Protext and Locoscript. While I can't speak about Locoscript, having abandoned it long ago, some of the comments you made about Protext are a little misleading.

For example, the claim that Protext is "less convenient because you can't use stock layouts". While this is true in essence, it neglects to mention that there are two very handy commands at your disposal. If you create two rulers at the start of the document you can happily leap-frog between them with the ALT-D and ALT-R commands. If that's too hard, you can always save rulers as blocks and paste them in exactly like Locoscript.

I also fail to see the advantage of the template for every group but if you're addicted to this concept you can have a template in every group with Protext. As for having to "manually" create a new file, what does that mean?

And finally who said you couldn't get a display of files in each group? Pressing F1 or CAT plus the group no. will lay it out for you. It's true Protext doesn't format automatically but it's simple enough to type FT when you've finished a document and format the whole text in one stroke – sorry two.
David Clough
London

You made some small but not insignificant mistakes in the Protext/LocoScript 2.comparison.

Create a layout under Looneyscript 2 and it takes several minutes of thought to work through the menus, then save it. Thereafter it's three keystrokes to insert one in the text. And under Protext it's much the same, but you are not limited in the number of layouts.

You claim that both mailmerges are similar. Not so, Protext is infinitely more powerful. Looneyscript can do some of the jobs but it's slower and not always possible.

Should you think that I am anti-Looneytunes 2 I would add that I wholeheartedly agree with your assessment of the relative merits of each program.
A D Lewis
London

*8000 PLUS Mistakes? Most of our comments about Protext are aimed, quite properly, at the LocoScript user, under which principle I think all that was said was fair and accurate. The first-time user of Protext won't find file creation, layout handling or group cataloguing obvious (certainly this one didn't). Anyway, if you read the article again, you'll see that we said Protext can't display all groups **at once**, as does LocoScript, which is certainly true.*

We recommend both programs very highly indeed. You're entitled to your own favourite; however, in my humble (but nevertheless correct) opinion, the sophisticated PCW owner uses LocoScript 2 for letters, layout-oriented documents and labels, and Protext for all creative writing, programming and mail merging.

LlocoSgrypt?

Thanks for the mention of the Welsh version of LocoScript 2 in your April issue, but there was an error. The User Guide supplied is the standard English version. We are working on the assumption that Welsh speakers will understand English sufficiently to use the manual, even though they will want the program itself in Welsh.

We can also supply other language versions of LocoScript 2 on the same basis, namely American, Canadian, Danish, French, German, Italian, Spanish and Swedish.

For people who require a full translation of the software and the user guide, we are selling through local distributors. Details are available from us on 0306 740606.
Howard Fisher
Locomotive Software, Dorking

8000 PLUS My mind still boggles at the thought of a Welsh LocoScript. How does the system of setkeys (⊡UL for underline, ⊡CE for centre, etc.) cope? Isn't everything ⊡LL? Have some of the menus had to be specially widened?

Do all the menus work in English as normal until an English person comes into the room, when they immediately switch over to Welsh?

Seriously it's good to see the word processing revolution spreading to languages other than all-pervading English. 'Progress' has swallowed up too many minority cultures in its time. O bydded i'r hen iaith barhau!

A Club is Born!

In Postscript (issue 12, August 1987) you mentioned a reader trying to form a Middlesex PCW-CP/M User Group.

Last night we agreed our constitution as MIDDLESEX AMSTRAD PCW CLUB and appointed officers to formally mark the birth – I received the dubious honour of becoming Treasurer! I invite readers to write to us direct with SAE.

We meet on the third Monday of most (not August) months at the Hanwell Community Centre. Just come along, bring £1 meeting fee. Don't worry if you think you know almost nothing about the PCW; that means you're normal and an ideal member; let's share what knowledge we have and make computing fun!
Ken Ritchie
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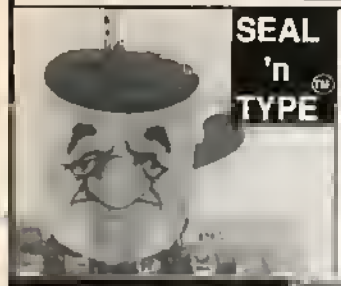

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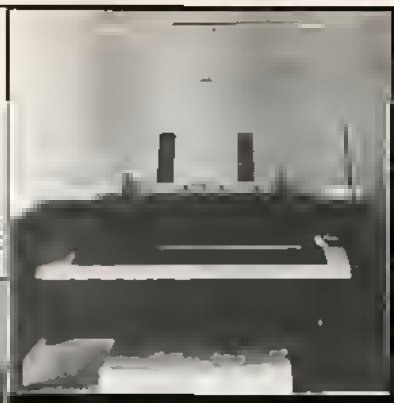

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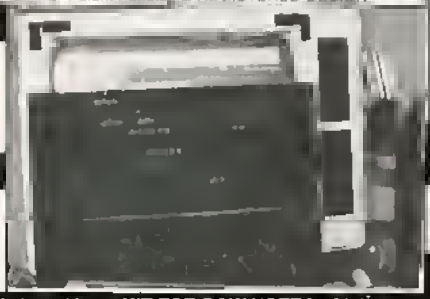

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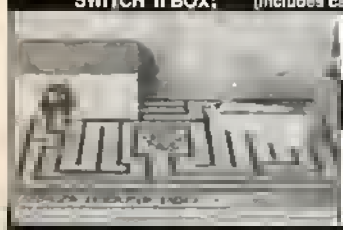

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LOCOS

THE GUIDE A

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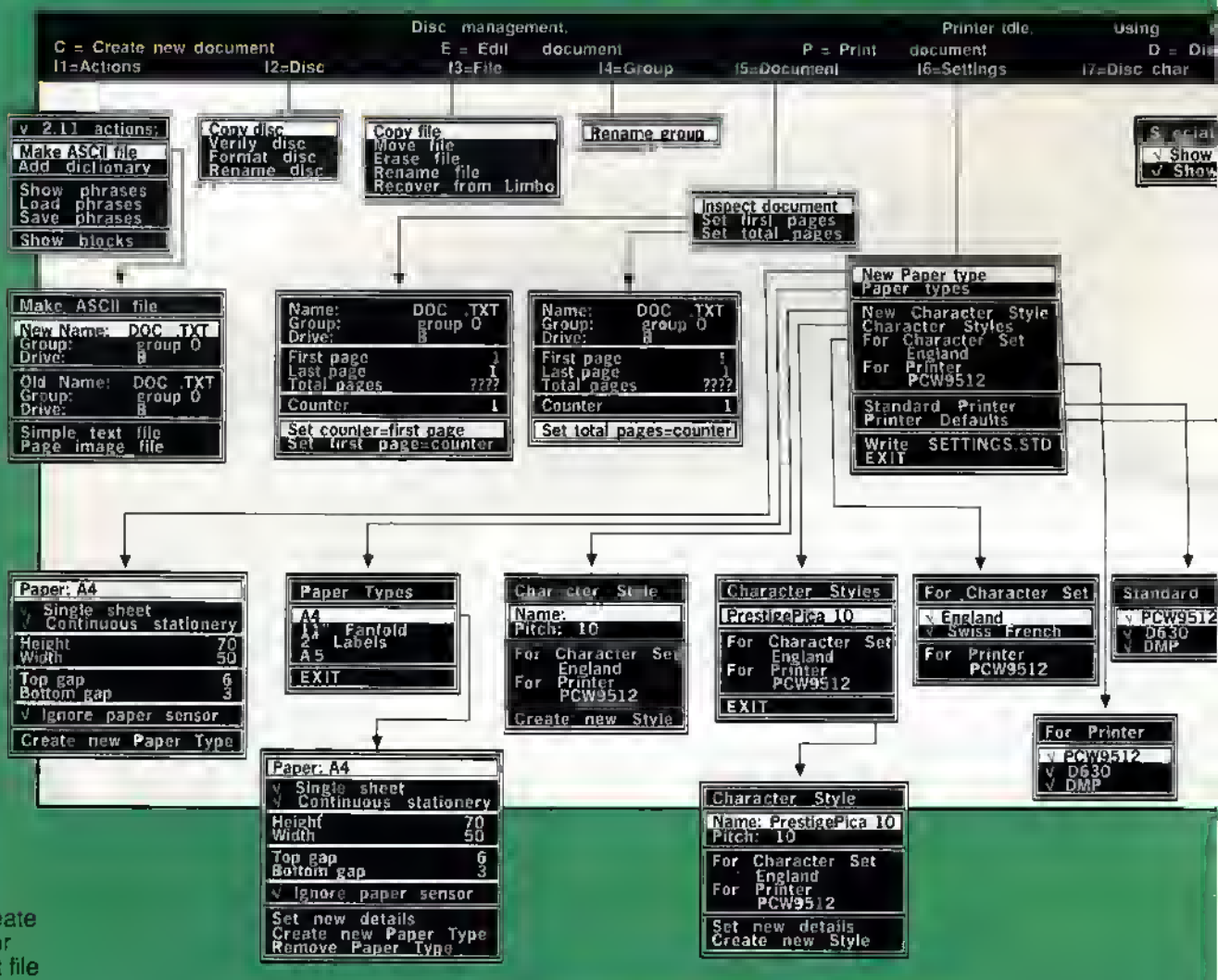
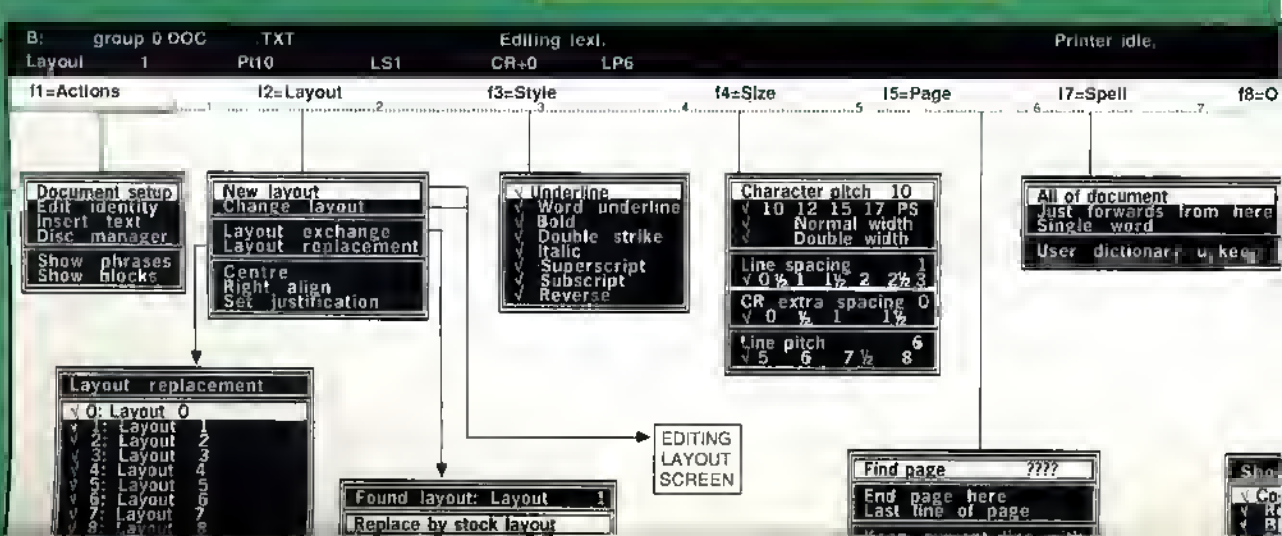


Create or Edit file

EDITING TEXT SCREEN



CRIPT 2

T YOUR SIDE

How to use this chart

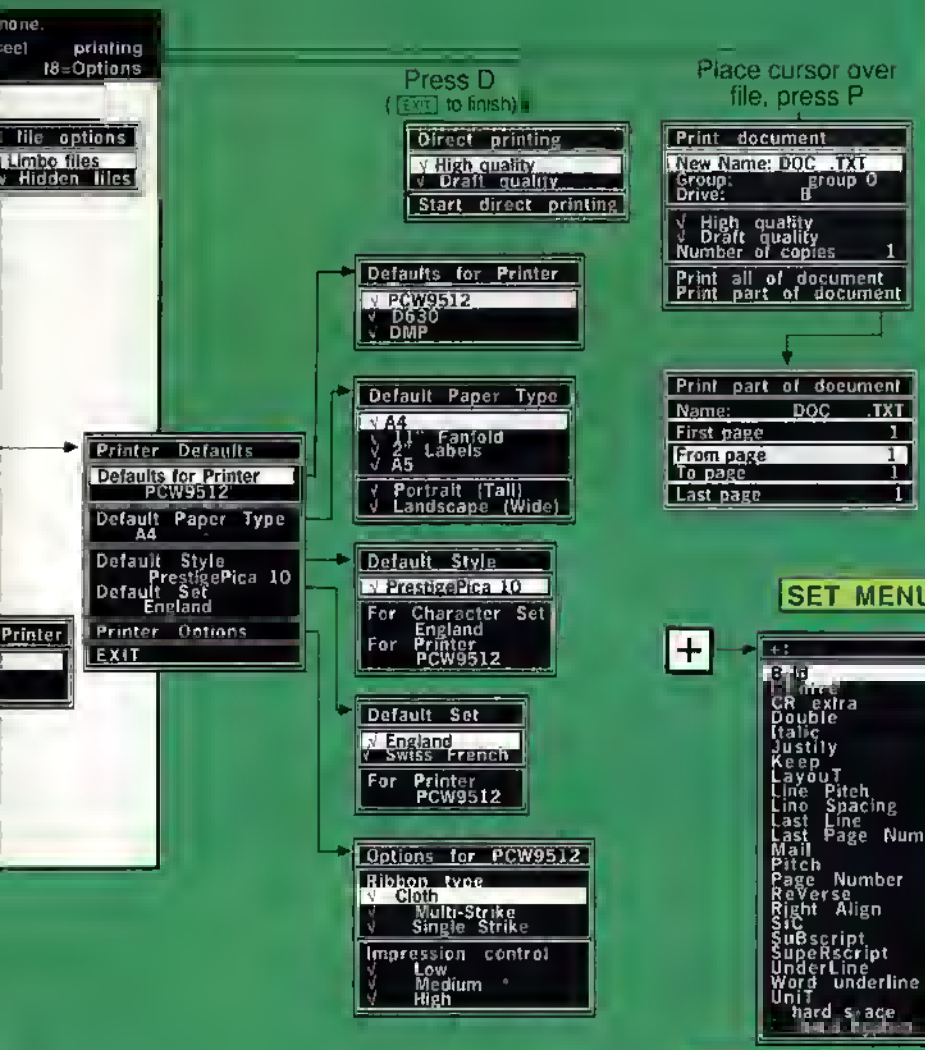
This chart details all the menus available in LocoScript 2. The normal procedure is to press the f-key ([f1], [f2], etc.) linked with the menu, use the cursor keys to move the highlight bar over the choice you want, then press [ENTER].

Options marked with a tick (√) need to be specially 'selected'. Press ⊞ or ⊟ to select or deselect, then press [ENTER] to perform the chosen action.

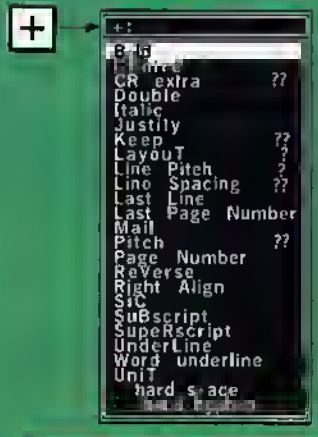
Some choices require you enter a number, for instance the Header and Footer size menu. After highlighting the option, type the number you want, then [ENTER]. After altering any other choices you want on that menu, press [ENTER] again to act on the entire menu.

In most places, the [CAN] key (for 'Cancel') aborts the current operation and returns to normal editing.

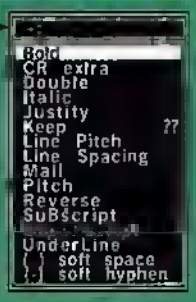
This chart is based on version 2.11 of LocoScript 2, as shipped with the PCW9512. Other versions may differ slightly, depending what paper and printer types you have set up.



SET MENU

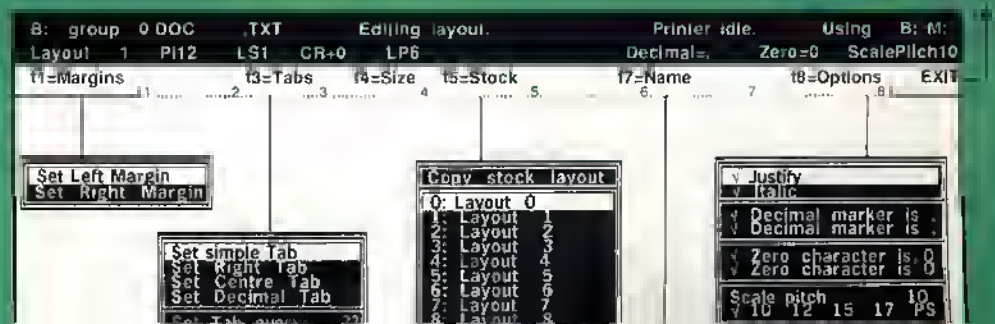


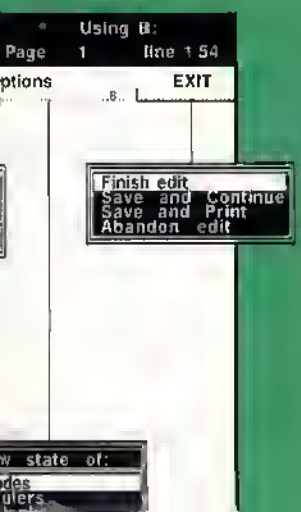
CLEAR MENU



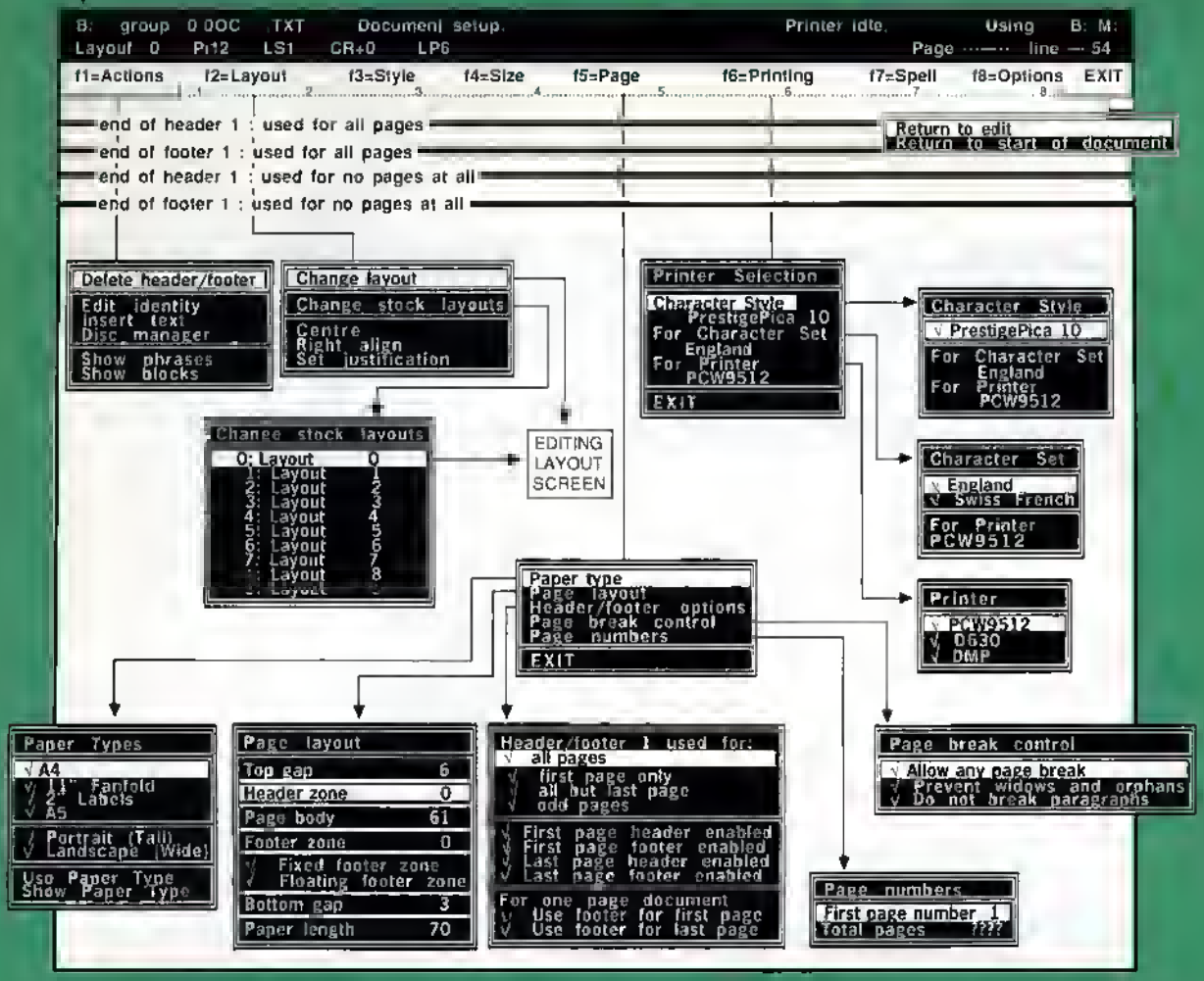
The Set and Clear menus are shortcuts for most of the main editing menus. For example, typing ⊡B turns on Bold, and ⊟B turns it off again. To use these menus, type ⊡ or ⊡ followed by the capitalised letters in the choice you want. The menu itself won't appear unless you deliberately wait for a few seconds. If a number is needed, you will be prompted to type it in and press [ENTER].

EDITING LAYOUT SCREEN





DOCUMENT SETUP SCREEN



Hold down ALT to get:

Hold down EXTRA to get:

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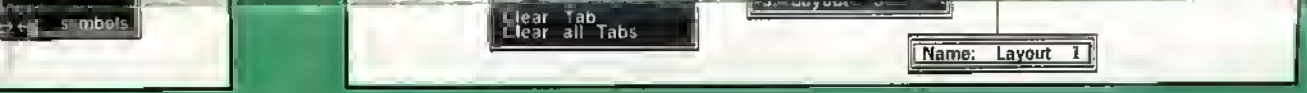
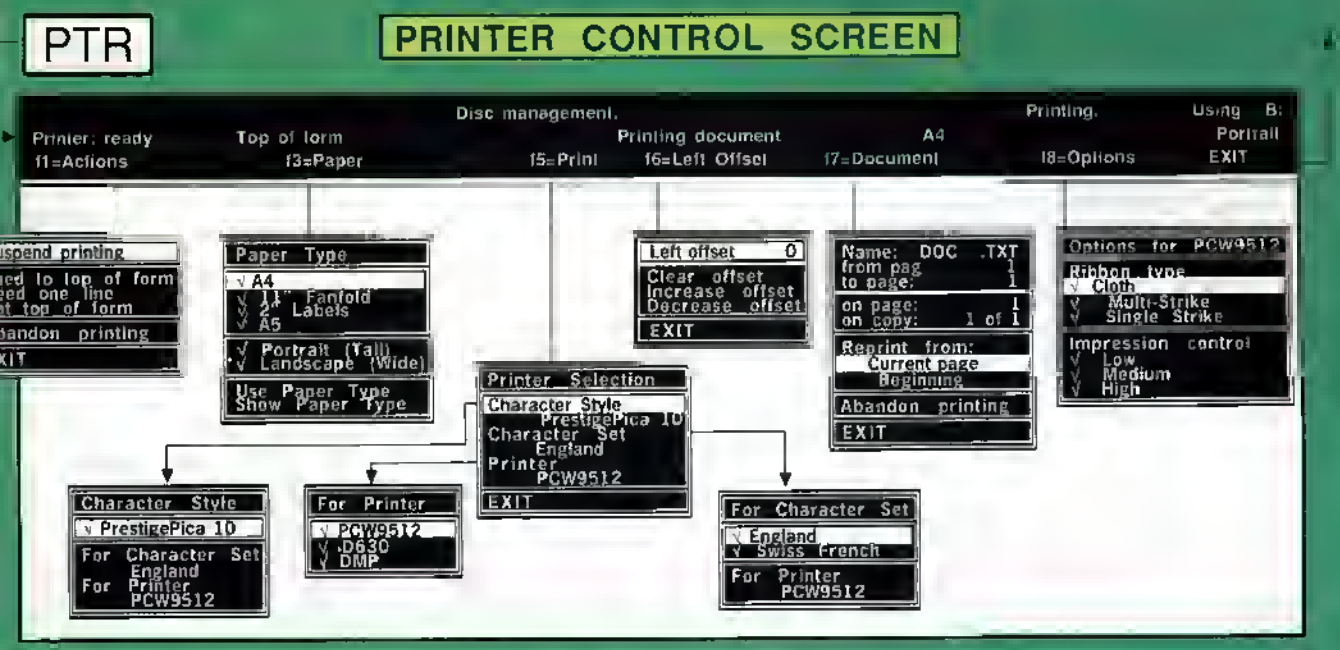
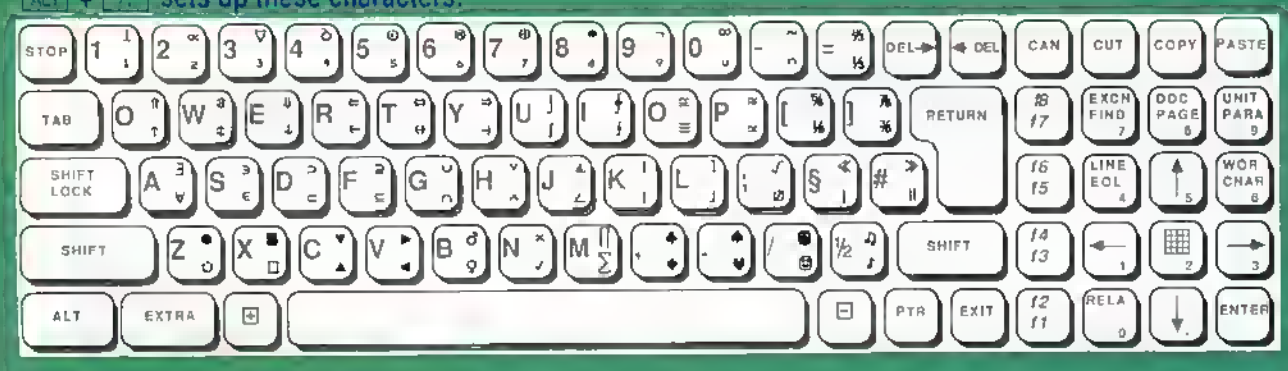




ALT + f7 sets up these characters:



ALT + f5 sets up these characters:

ALT + f3 sets up these characters:

To get back to normal characters, do a ALT + f1

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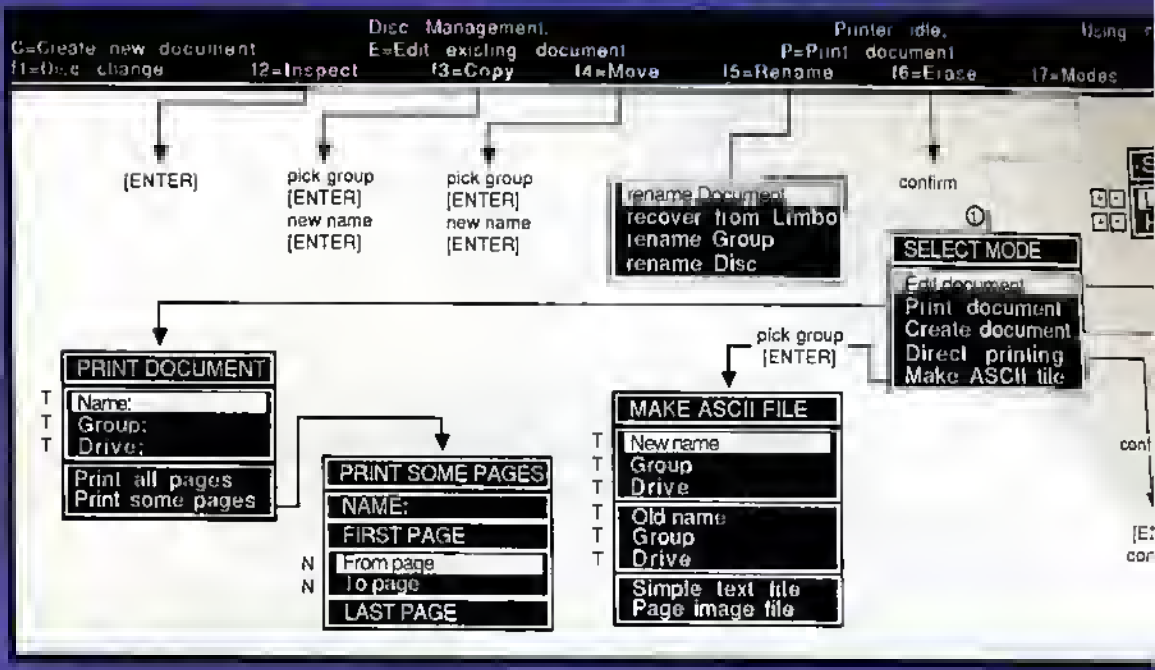
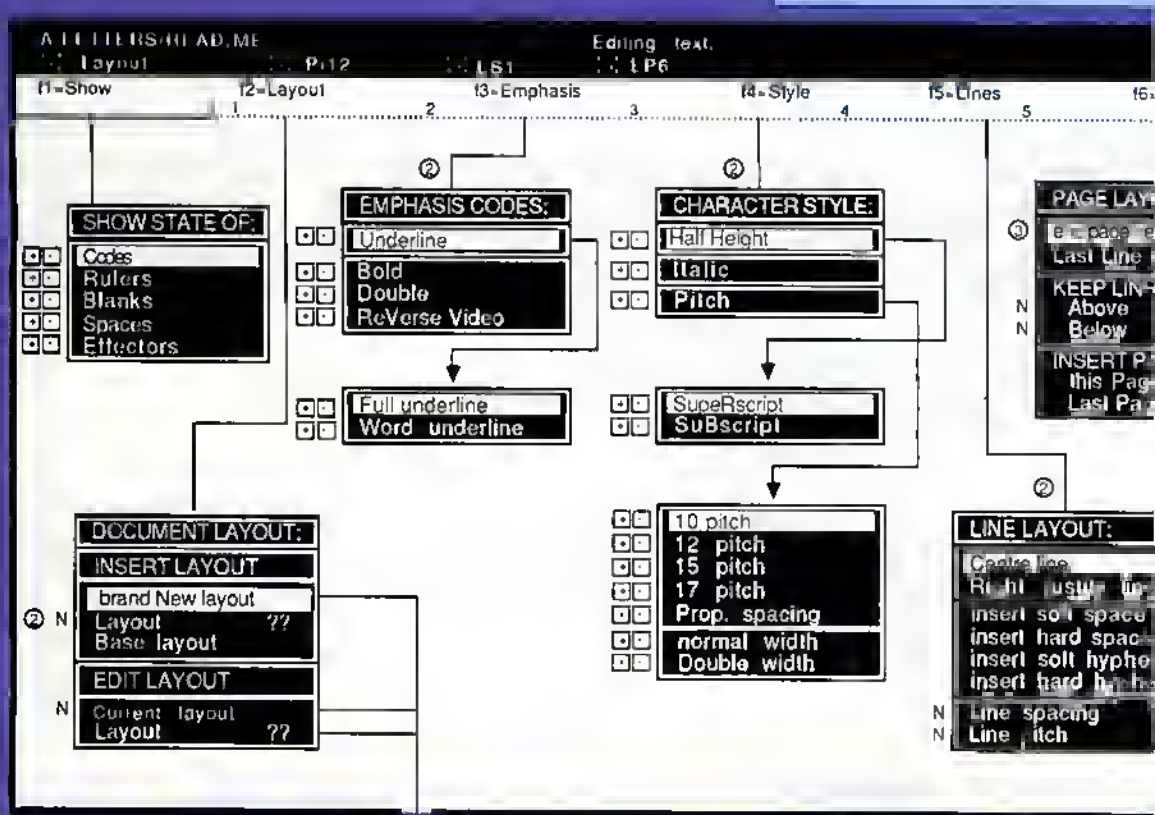
THE

DISC MANAGEMENT SCREEN



EDITING TEXT SCREEN



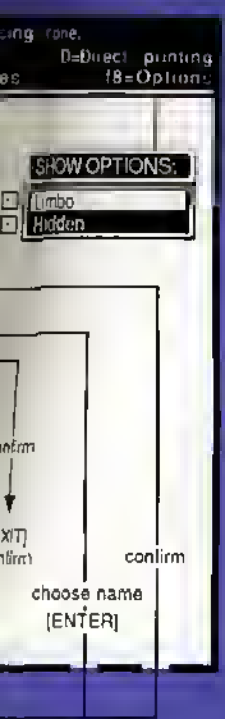
COSCRIPT

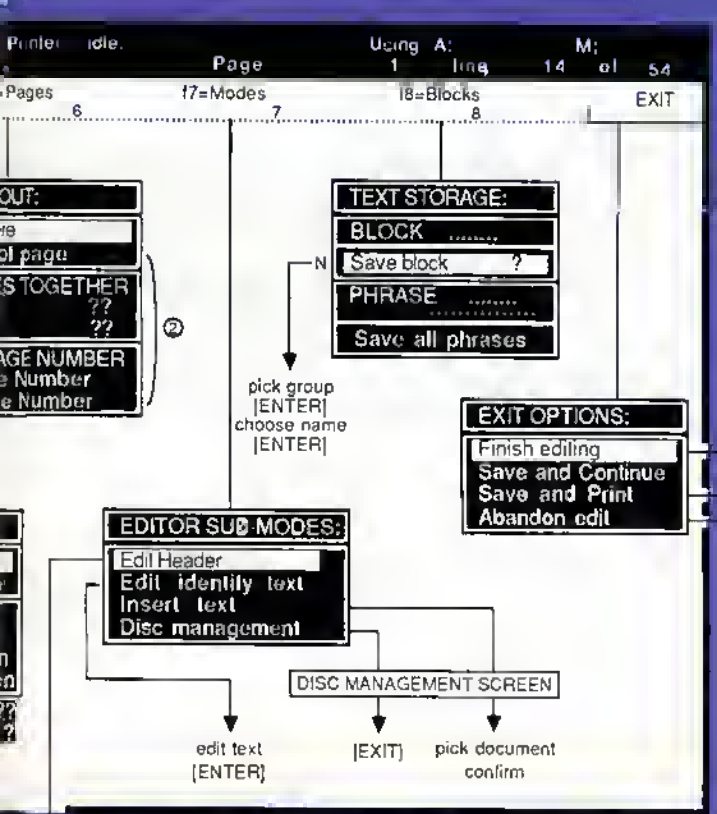
E GUIDE AT YOUR SIDE

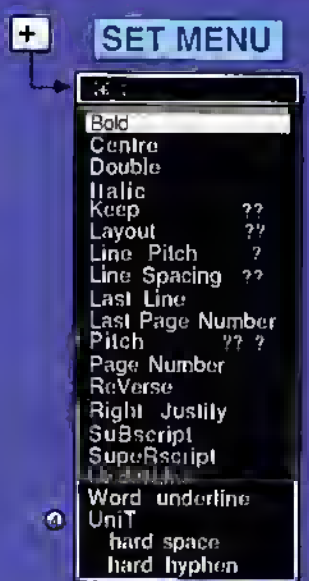
How to use this chart

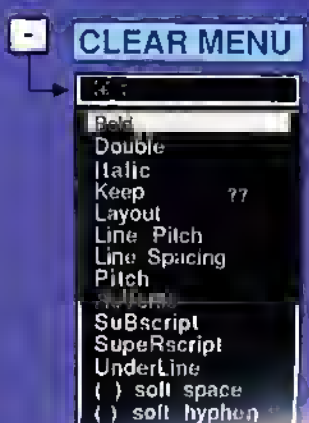
This chart shows all the possible screens and menus that you can see in LocoScript, how to get to each one and where it goes afterwards. To make it easier to read, we've used certain conventions:

- ▶ Where there's no other legend, the normal way of using a menu is to place the highlight bar over the item you want using the cursor up and down keys, and then press [ENTER] which both actions the choice and clears the menu off.
- ▶ Menu choices in capitals are headings and cannot be selected – the highlight bar will just skip over them.
- ▶ If the menu choice has ⊞⊟ by it, then you must press ⊞ to set or ⊟ to clear the choice before pressing [ENTER] to complete.
- ▶ If the menu choice has N or T by it, then you must type a Number or some Text respectively followed by [ENTER], before pressing [ENTER] again to complete.
- ▶ Some of the simple menus that merely ask you to confirm an action have been left off – the chart just says "confirm" at these points. Press [ENTER] to proceed or [CAN] to stop.
- ▶ Where further explanation is needed, we've used a footnote.

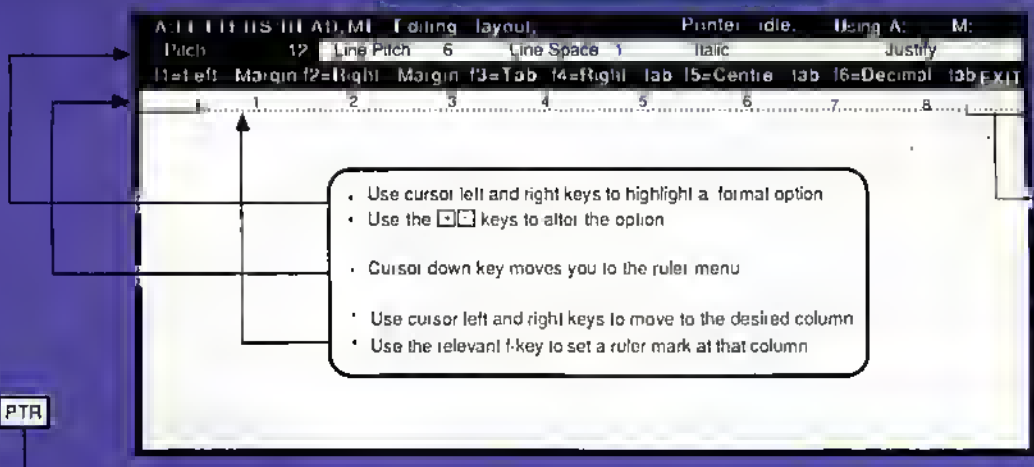






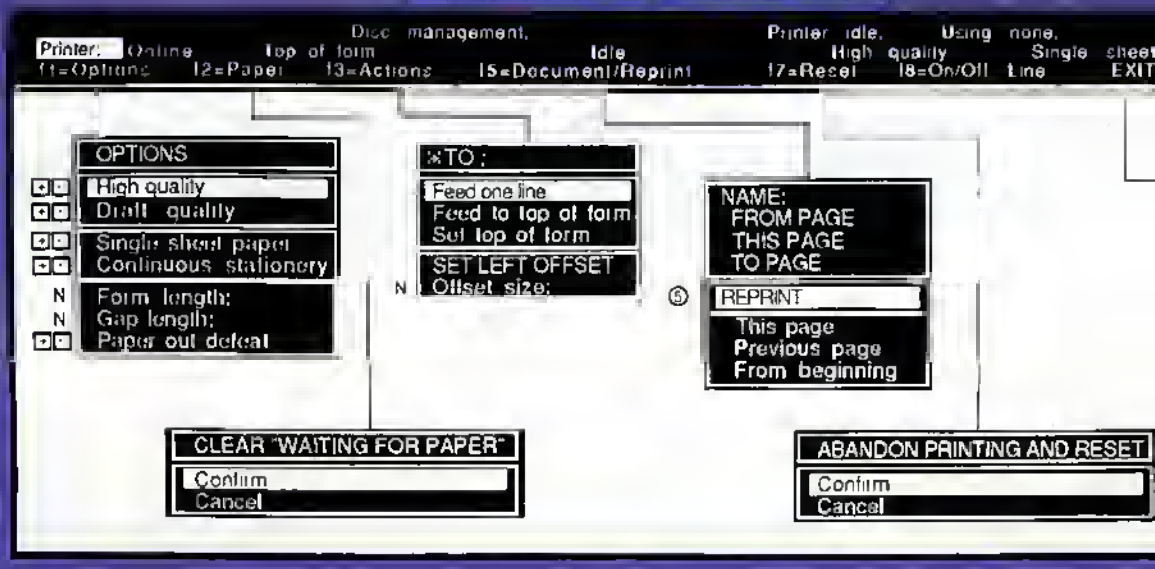


EDITING LAYOUT SCREEN



PTR

PRINTER CONTROL SCREEN



FOOTNOTES

1. The choices in this menu can be directly accessed from the Disc Management screen by their initials **E**, **P**, **C**, **D** as appropriate.
2. This choice, or all choices in this menu, can also be accessed with the SET (⊞) and CLEAR (⊟) menus - see the LocoScript manual pp 121-123.
3. This choice can be directly typed with the k [ALT]+[RETURN].
4. The UNIT choice can only be accessed by the se
5. The REPRINT choice can be highlighted but no must use one of the choices below it on the menu

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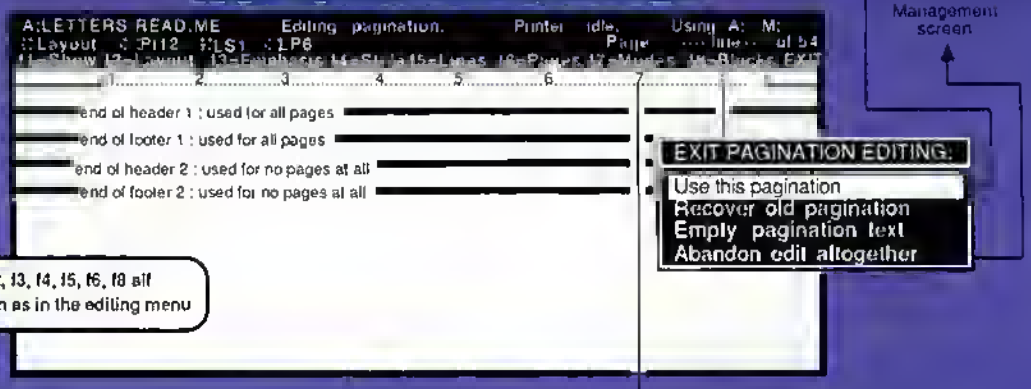
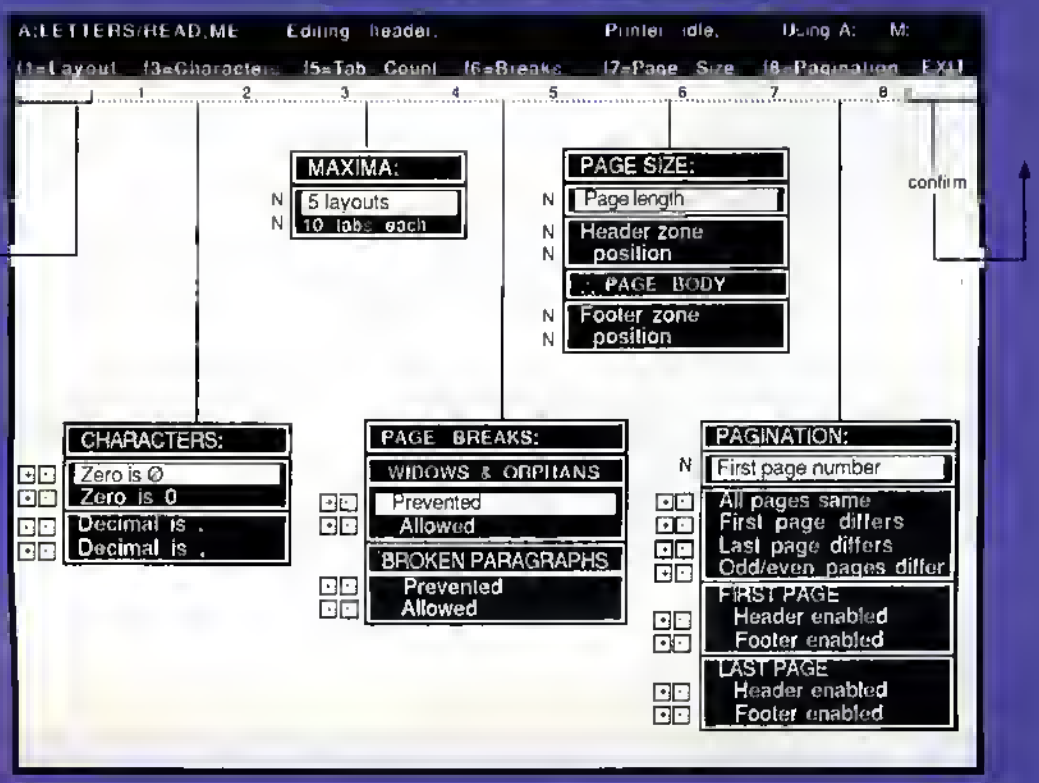
Hold down [ALT] to get:

EDITING PAGINATION SCREEN



EDITING HEADER SCREEN



ey combination
t menu.
t selected – you

Hold down ... to get.